Preserved

App. F. IX-4

1935-6
(G.G.)

File No. 65-35

Serial Nos. 13, 16, 17, 20, 21

Previous References

A+E 90-32 (60, 61, 64, 65)
G.G. 35-35 (1-10, 14-15)

Letter References

G.G. 163-37 (1-6)
108-39-1-2
LR. 71-44-1-V

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. five

Part B for Jany 38

SUBJECT.

Technical programme of work for Field Research station at Hessarghatta mysore state

WD 0295—GPB—22,500—13-8-37

5907 (1) 5907

General and Revenue Secretariat | File No. Gen. 65 of 1935 | [App. F. III—2

Serial No.	
18.	Letter no. Rve. 2206 H.C. 816.36 dt 24.4.37 from the Dir of Agri forwarding a Note drawn up by Dr. V.C. Badami about the Technical programme of work in connection with the Fruit culture scheme, and suggesting the desirability of calling for a meeting at which both Dr. Badami and Dr. Dharmani may be present.
D	According to G.O. No. D. 5760-4 Gen. 25.35-9 dt 27.2.37 - para 7 -, the Depart. Engr has to work out in consultation with the Dir of Agri. full details of the Cost of initial equipment and the amount required for recurring expenditure over and above the sum sanctioned by the D.C. A.R. and to submit a report to Govt. A detailed technical programme of work to be carried out has to be sent to the D.C.A.R. for approval. The Report may perhaps be asked to take necessary action on the present note in consultation with the Dirs. of Agri. Subject to above

I think a letter was received here today in this connection from the Secretary to Govt. Agri. This relates to the eqpt. of the Demonstration Farm. Must be sent before 7th Sept. 29.4.37 D. 5623.35 14.8.37.

2 The proposal of the Dir

Note—Contd. sheet. WD 1417—GPB—30,000—8-9-36

Grain Research Scheme - 575

File No. G.G. 65 of 1935.

General and Revenue Secretariat

Serial No.

To for orders

Ch Secy 20.4.37

2nd member)

3 MS 3074

CHIEF SECRETARY. 30 APR 1937 GOVT. OF MYSORE.

4 MS 5/5/37

SECOND MEETING OF COUNCIL 1 1-37 No. 7864

MS 5/5.

6.5.37.

Received in Secretariat. It is unnecessary to call for a meeting. The Supdt. should accept responsibility for the technical programme. He should work it up in consultation with the Dir and Dr Badami if necessary and submit the same to Govt. please with a D.O. to him to come and meet me to discuss the programme

6 Supdt Called 18.6.5.37.

Ch. Secy 7.5.37

SECRETARY. 7 MAY 1937 GOVT. OF MYSORE.

The note of the Supdt. Govt. Gardens is submitted for perusal before submission to the I.C.A.R.

MS 2.6.37

2nd member

Director

2.6.37

10/5/37

Telephoned 18.10.5.37.

Cocoa Research Scheme in Mysore

5907

6596

General and Revenue Secretariat	File No.	of 193	[App. F. III—2

Serial No.

7 Mr. Ch. Ley has given detailed instructions to Dr Doreswamy who has been asked to prepare a technical programme in consultation with the Dir of Agri for transmission to the I.C.A.R. This may be awaited

Ley
11.5.37

GOI 1876
12 MAY 37
11 MAY 1937
DEVELOPMENT BRANCH

Letter no. 38248/28-5-37 from the Superintendent of Agriculture, Mysore, submitting the detailed technical programme of work for needful action.

16 8 Submitted for perusal; it is not known if the scheme has been approved by the Dir of Agri. It is for orders if a copy of the scheme may be sent to the Secy., I.C.A.R. for approval as required in Govt of India's D.O. no. Q-5756 dated 24 Sept. 35-9 dated 27.2.37.

A
Q.
18.2.95.37
Yes
9A. Yes please put up draft
Ley
21.5.37

10 Submitted with a draft.

18.1.6.37.
Ch. Ley
Ley
1.6.37

Copy of Govt. letter and proposed reply dated 21.5.37

NOTE—Contn. Sheet.

WD 0417—GPB—30,000—8-9-36

65 76

4 Fruits Reserves Scheme - Technical Programme

File No. G.G. 65 of 1935-

General and Revenue Secretariat

Serial No.

Date

5497

OFFICE OF THE SECOND MEMBER FOR COUNCIL
2 JUNE 1937
NO 868-2

1| The note of the Superintendent, Government Gardens is submitted for perusal, before transmission to the I.C.A.R.

Second Member & Dewan.

MS 2.6.37

Ch Sec 2.6.37

12 Secy 8/6/37

13 Wants it. M. to hear Hyderi Mem. not sent printed copies of their Report Copy is M. M. Chair.

JM 3-6-37

14 Mr Ranchiah M.S. to request to fix Mrash M. M. before it is sent to the I.C.A.R.)

MS 4/6.

Ch Sec 4.6.37

DM

15 Draft DO letter to Mr. Kramrisch is submitted for approval

DD 5/6/37

Ch. Secy 5.6.37

16 Please get the note printed and send a proof copy to Mr Kramrisch.

MS 5/6

Ch Sec 7.6.37

17 Draft letter sent

Dom 7/6

CHIEF SECRETARY
5 JUL 19
GOVT. OF MYSORE

5596 2360-37 5

General and Revenue Secretariat | File No. 65 of 1935-6 | [App. F. III—2

Serial No.

16 Printed Copies of the Tech Programme have been since recd. May I/c obtain letter from Secy, I.C.A.R. the reasons?

16.2.6.37

Form

19 Issued 21.6.37

17. D.O.No. 926.6.37

Secy. Imperial Council of Agl Research Simla

Forward 3 printed Copies of the Technical Programme and request making Communication of approval of the Council to Govt.

Letter No. 1284 dt 28.10.1937 from the Supdt. G.F. forwarding an extract from the Proceedings of the Meeting of the Wheat Research workers' Conf. held at Simla on 13.9.1937.

2) Subs for perusal; the Technical programme of work under the Wheat Research Scheme was provisionally approved at the Confce. of Wheat Research workers the report of the I.C.A.R. may be amended perhaps.

NOTE—Contn. Sheet.

WD 0417—GPB—80,000—8-9-36

18.6.11.37

Fruit Research Scheme - Technical Programme

2360

G.C. File No. 65 3333 of 1935.

General and Revenue Secretariat

Serial No.

For perusal. The Technical programme has to be approved by the I.C.A.R. and this will be awaited.

Ch. Secy) 6.11.37

2nd member)

22 MS 6.11.37

6. NOV. 19 GOVT. OF MYSORE

8.11.37

23 MS 18/11/37

MS 18/11

11.11.37

No. 3476.

Letter No. F. 5-2(25)/37 A. & 15.12.1937 from the Secy, I.C.A.R. Stating that the Tech. programme of work under the Fruit Research Scheme was considered by the Horti. Research workers' Confce. and the Advisory Board in Nov. 1937.

It is Suba with a draft.

ICS. 23.12.37

Ch. Secy)

2nd member)

GEN. & REV. SECRETARIAT 11 NOV. 1937 GOVT. OF MYSORE

DEVELOPMENT SECRETARY. 2333 GOVERNMENT OF MYSORE

ICS 24/12

MS 25.12.37

24 DEC. 19 GOVT. OF MYSORE

MS 28/12/37

28/12

Issue

29/12

OFFICE SECOND MEMBER OF 27 DEC. 1937 No. 4572

7

2360 3333

General and Revenue Secretariat | File No. 9-9-65 of 1935. | [App. F. III—2

Serial No.	
21	Letter No. D-4854/12.1.38 to the Inspector-G.C. stating that the Technical Programme of work has been agreed to.

BM 17.1.38.

NOTE—Contn. Sheet.

WD 0284—GPB—30,000—13-8-37

FRUIT RESEARCH SCHEME IN MYSORE.

CONTENTS

INTRODUCTION

DETAILS OF EXPERIMENTS AND PROGRAMME OF WORK—

- A. APPLES
- B. PINE APPLES
- C. MISCELLANEOUS FRUITS

STATEMENTS—

- LIST OF APPLES FOR TRIAL
- LIST OF OTHER FRUITS FOR TRIAL

FRUIT RESEARCH SCHEME IN MYSORE.

Introduction.

The scheme, as sanctioned by the Imperial Council of Agricultural Research, proposes an extent of 45 acres, out of which 25 acres come under apples and 20 acres under miscellaneous fruits including pine apple.

The site for the Fruit Research Station has been selected in the village of Aivarakhandapur in close proximity to the Hessarghatta Reservoir, about 18 miles by a motorable road from Bangalore, and six miles from the Chikbanavar Railway Station on the Bangalore-Poona line. A piece of land, 50 acres in extent, having a gentle slope with a deep loamy soil and subsoil and capable of further extension has been selected. The value of the land has been estimated (at Rs. 250 per acre) Rs. 12,500.

The Hessarghatta Reservoir temporarily will be an unfailing source of water-supply to the orchard. Water will have to be pumped for irrigation purposes and an electric pump of suitable capacity and a distributory system of pipes will be provided at a cost of Rs. 10,000.

The building required for the staff, office, laboratory, stores, etc., will be constructed by the Mysore Government on the station itself at a cost of Rs. 40,000.

The Imperial Council of Agricultural Research has sanctioned the above scheme at a total cost, not exceeding Rs. 46,200 spread over a period of five years for recurring items such as establishment and maintenance charges. It is found that the provision of Rs. 100 made towards maintenance charges per acre per annum is not sufficient as a sum of Rs. 200 would be the minimum provision required for maintenance.

The Government of Mysore, which has to meet all the non-recurring expenditure such as, land, buildings, pump with pipe connections, fencing, laboratory equipment, etc., has also, to meet the amount required for recurring expenditure over and above the sum sanctioned by the Imperial Council of Agricultural Research. The amount to be spent by the Government of Mysore will be Rs. 1,10,000.

The following detailed programme indicates the nature of experiments and the methods to be adopted for a successful establishment of an orchard. Before laying out systematic plots the whole area will be thoroughly cultivated and then pits will be dug. Wind breaks and live-fences necessary to give protection to fruit plants will be planted early. The whole area will be fenced to give protection against cattle. The material for planting will be obtained from East Malling Fruit Research Station and from firms of repute in Australia, S. Africa, Italy and India.

TECHNICAL PROGRAMME OF WORK.

A. Apples.

I. The general layout for apples in all the experiments will be as follows.— Distance between plants will be 15 feet, distance between rows 15 feet and the margin between plots will be six feet.

Experiments in Stocks.—These experiments will be conducted with a view to studying the suitability of various stocks, their influence on growth, production and resistance to diseases.

(*a*) Rome Beauty will be grafted on nine imported stocks. The plots will be laid out in Latin square method, with ten plants in each plant or row. The stock will be arranged in two groups of five varieties with Northern Spy as check.

Group I.	*Group II.*
1. Northern Spy.	1. Northern Spy
2. Paradise	2. D Very Vigorous XII
3. Crab	3 Do XIV
4. Semi Dwarfing II	4. Do XV
5. A Very Dwarfing IX	5. C Vigorous Broad-leaved English I.

Total number of plants required will be 500 and the area of the experimental block will be 3 acres and 16 guntas (One Gunta=1/40 acre).

(*b*) Stocks available in the local orchards will be inspected and plants which are fifteen to twenty years old, resistant to diseases and vigorous, will be selected, for raising stock plants by forcing them to sucker. The suckers, when sufficiently grown up will be transplanted in nursery beds. Rome Beauty will be grafted, when the stocks are properly established. The grafted plants, ten of each will be planted in rows for study and observation. Area of the experimental block will be about 24 guntas.

The total area thus allotted for stock experiments will be 4 acres. For programme of work see Statement I.

II. Varietal Trials.

At present Rome Beauty is extensively grown as the main type on account of its prolific yield, flavour, colour and keeping qualities. This variety will be used as check in the tests.

(*a*) *Critical Tests.*—The following nine of the most important varieties, most of which have given good yield in Bangalore and Mysore, will be tested under Latin Square methods with nine plants in each plot or row. These varieties will be tried in two groups of five varieties with Rome Beauty as check.

Group I.	*Group II.*
1. Rome Beauty check	1. Rome Beauty check
2. Ribston Pippin	2. Kashmiri Ambrai
3. Jonathan	3. Peas goods nonsuch
4. Glengyle Red	4. Devonshire Quarrendon
5. Cox's Orange Pippin.	5. Christmas

Total number of plants to be planted will be five hundred in an area of three acres and sixteen guntas.

(*b*) *Preliminary Trials.*—As there are several 'good' varieties which have never been tried systematically in this locality, preliminary trials will be conducted with a view to selecting the best, and introducing them at a later stage for general cultivation among the orchardmen.

More than seventy-five new introductions (*vide* page 6 for details) will be tried in rows with Rome Beauty as check after every eight varieties. Ten plants of each variety will be planted in a row. The total number of plants for study will be nearly nine hundred.

(*c*) *Preliminary trials of Culinary apples.*—More than twenty-five varieties (*vide* page 6 for details) will be planted for study in an area of nearly three acres. Here as in other cases Rome Beauty, will be used as check and ten plants per variety will be planted in single rows.

The total area under varietal trials will be ten acres. Detailed programme of work is given in statement No. I.

III. Manurial Experiments.

The present standard variety—Rome Beauty, will be used for the manurial tests. The whole plot will receive a general dressing of ten tons of farm-yard manure and artificial manures will be given to the plants separately.

The general mixture selected for apples is the one recommended by the British Board of Agriculture, *viz.*, 5 cwts. of ammonium sulphate, 4 cwts. of superphosphate, and 1 cwt. of sulphate of potash, thus giving a dose of 5-6 lbs. of the mixture per plant. Half the suggested dose will be given in the first vear. three quarters in the second year, and full dose from the third year onwards.

(*a*) To test the effect of individual manures and in combination, experiments will be laid in Latin Square method, with nine plants in each plot or row.

Group I.	*Group II.*
1. Sheep manure 50 lbs.	1. Ammonium sulphate and sulphate of potash 3·36 lbs.
2. Ammonium sulphate 2·8 lbs.	2. Ammonium sulphate and superphosphate 5·04 lbs.
3. Superphosphate 2·24 lbs.	3. Superphosphate and sulphate of potash 2·8 lbs.
4. Sulphate of potash 0·56 lbs.	4. Ammonium sulphate, superphosphate and sulphate of potash 5·6 lbs.
	5. Sheep manure 50 lbs.

Distance between two experimental plots will be thirty feet to prevent the inter action of different manures. Apple Christmas will be grown in the guard row. The total area under these experiments will be five acres containing eight hundred plants for observation and study.

(*b*) *Dosage Trials.*—These experiments will start from the third year onwards when the plants come to fruiting. The experiments will be laid out in randomised blocks with four replications. Rome Beauty will be used for these trials whilst Apple Christmas will be planted in the guard rows. The whole plot will receive in the beginning ten tons of farm-yard manure:

(1) Half dose at the beginning of the season
(2) Full or normal dose at the beginning of the season.
(3) One and a quarter dose at the beginning of the season.
(4) Half dose after setting of fruits.
(5) Full or normal dose after setting of fruits.
(6) One and a quarter dose after setting of fruits.

The area occupied for these trials will be two acres and four hundred plants will be under observation. Total area under manurial trials will be 7 acres. For details of the programme of work (*vide* Statement No. I).

IV. Irrigation Experiments.

Experiments will be laid out to ascertain the optimum quantity of water required to produce a successful crop. In addition the manner in which water should be used and intervals at which irrigation should be given will be ascertained. Experiments will be laid out in randomised block method with ten plants in each plot, replicated four times using Rome Beauty as the standard variety.

(*a*) *Method of Irrigation.*—I. Ring method 2. Furrow method. The area under method of irrigation will occupy half an acre with eighty plants for observation and study.

(*b*) *Frequency of Irrigation.*—Once in 3, 6, 9 and 12 days. This experiment as stated above will be laid out in randomised block method with ten plants in each row, replicated four times in an area of one and half acres. About three hundred plants will be under observation.

An area of one and half acres will come under irrigation experiments. Programme of work is detailed in Statement No. I.

V. Pollination Experiments.

One acre will be planted with twenty varieties of apples including Rome Beauty, and observation will be made as to whether the plants are prone to self-fertilisation or cross-fertilisation and whether larger yields are obtained when self-fertilised or fertilised by other varieties.

VARIETIES OF FRUITS TO BE TRIED ON THE FRUIT RESEARCH STATION IN MYSORE.

I. Apples.

(a) *Desert Apples.*

Early Harvest
Sharp's Early
Blenheim Orange Pippin
Delicious
Worcester Pearmain
Red Astrican
William's Favourite
Beauty of Bath
Summer King
Ben Davis
Cliff's Seedling
Esopus Spitzenburg
Lalla
Monmouth Pippin
Irish Peach
Loy
Newman Seedling
Primrose Bismark
Rhode Island Greening
Versfelds
White Winter Pearmain
Crofton Pearmain
Dougherty
Crimes Golden
Hover
Scarlet Pearmain
Sharp's Late Red
Sturmer Pippin
Yapeen Seedling
Upton Pyne
Red Victoria
Bridget
Duchess of Bedford
Wintersterne
Reinette Zuccamaybo
Baldwin
Claygate Pearman
Owen Thomas
King of the Pippins
Commerce
Granny Smith
Laxton
Nickajack
King David
McIntosh Red
Peasgoods nonsuch-London Pippin
Munroe's Favourite
Rokewood
Wemmer's Hock
William Anderson
Democrat
General Carrington
Henry Clay
Rymer
Senator
Springdale
Willie Sharp
Sarisparéil
Monarch
Ponsford
Clerk's Seedling
Wanstall Seedling
Colville Blanc
Belle-de-Boscop
Boscomb's Mystery
Yates
Fearns Pippin
Early Peach
American Mother
Golden Russette
Washington
The Sandringham
The Queen
Braddick's Nonpareil
Egremont Russet

(b) *Culinary Apples.*

Emperor Alexander
Lord Nelson
Prince Alfred
Royal Late Cooking
Bismark
Lord Grosvenor
Sterling Castle
Grayeinstein
Lord Wolesley
Red Statesman
Lane's Prince Albert
Newton Wonder
Dumelow's Seedling
New Northern Greening
Warner King
Golden Noble
New Hawthomdon
Duchess of Owenberg
Royal Russet
Potts Seedling

II. Pine Apple.

1. Queen
2. Kew Giant
3. Smooth Cayenne
4. Mauritius
5. West Indian
6. Ripley Queen

MISCELLANEOUS FRUITS.

III. Guavas.

1. Varieties from Bangalore, Bombay, Benaresé; Sind and Allahabad.
2. Psidium Cattleyanum
3. Do guinensis
4. Do possiferum

IV. Custard Apple.

1. Anona reticulata
2. Do cherimolia
3. Anona muricata
4. Do squamosa

V. Pomegranates.

1. Local varieties from Sarakki, Jaraganahalli, Chintamani, and Madhugiri.
2. Wonderful
3. Bedona
4. Spanish Ruby
5. Rhoda
6. Paper shell

VI. Figs.

1. Local Ganjam variety
2. White Adriatic
3. White Genoa
4. Black Genoa
5. Castle Kennedy
6. Tiger
7. Kadota
8. Calimyrara

VII. Peaches.

1. Sharanpur (N. India)
2. Duke of York
3. Oklahoma Queen
4. May flower
5. Early Rivers
6. Elberta
7. Brook
8. Killie Krankie
9. Florida Crawford

VIII. Pears.

1. December
2. Sweet Safraan
3. Beurre Bosc
4. Beurre Hardy
5. Beurre Superfine
6. Easter Beurre
7. Keiffer Hybrid
8. Vicar of Wakefield
9. Winter Nelis
10. Packham's Triumph
11. Josephine de Malines

IX. Papaya.

1. Local varieties
2. Washington
3. Singapore
4. Ceylon
5. Honey Dew
6. Mammoth Java
7. Phillippines

X. Strawberries.

1. Royal Sovereign
2. Melba
3. Illawarra

XI. Blackberries.

1. Evergreen
2. Himalayan

XII. Avocado.

1. Trap
2. Pollock
3. Dickson
4. Dutton
5. Lyon

L. S. Dorasami,
Offg. *Superintendent*,
Government Gardens in Mysore.

STATEMENT No. I.

PROGRAMME OF WORK.

Apples.

Experiments	First Year	Second Year	Third Year	Fourth Year	Fifth Year
1. Stock Experiment.	(*a*) Planting stocks. (*b*) Rearing and attending to other operations.	The following observations will be made :— (*a*) Attending to routine operations. (*b*) Girth of stem (*c*) Spread of plant. (*d*) Height of plant. (*e*) Rate of growth. (*f*) Resistance to pests and diseases and drought conditions. (*g*) All plants fit for grafting will be grafted with Rome Beauty.	Same as in the 2nd year.	(*a*) The observations made in the previous year will be continued. Besides the following observations will be made as the plants come to bearing. (*b*) Examination of floral structure. (*c*) Time of flowering. (*d*) Time of setting. (*e*) Time of harvesting. (*f*) Yield (Individual Tree Record). (*g*) Weight of fruit. (*h*) Colour ... (*i*) Flavour and taste. (*j*) Texture.	Same as in previous years.
2. Varietal Trials.	(*a*) Planting all the available vars. (*b*) Attending to shaping and other routine operations.	Same as for Stock experiments except Item (*g*).	Same as above ...	Same as above	Same as above.
3. Manurial Experiments.	(*a*) Planting ... (*b*) Attending to shaping and other routine operations. (*c*) Manuring as detailed in the body of the report.	(*a*) Three-fourth normal doze of manure will be applied. (*b*) Same as for stock experiments (except Item *g*).	(*a*) Normal dose of manure will be applied. (*b*) For dosage trials the different doses of manure will be tried before flowering and after setting of fruits. (*c*) Observations same as for Stock Experiments.	Same as in the 3rd year.	Same as in the 3rd year.
4. Irrigation Experiments.	(*a*) Planting and attending to other routine works. (*b*) Irrigation by Ring and Furrow method. (*c*) Irrigation at different intervals.	Same as for Stock Experiments except Item (*g*).	Same as for Stock Experiments.	Same as for Stock Experiments.	Same as for Stock Experiments.
5. Pollination Experiments.	Same as for Varietal Experiments.	Same as for Stock Experiments except Item (*g*).	Same as for Stock Experiments.	Same as for Stock-Experiments. (*a*) Half the No.. of plants will be left open for natural pollination and the other half under controlled pollination.	Same as in the 4th year.

STATEMENT No. I—*concld.*

Experiments	First Year	Second Year	Third Year	Fourth Year	Fifth Year
6. Thinning Experiments.	Planting and attending to routine operations.	Same as for Stock Experiments.	Same as for Stock Experiments.	(*a*) Same as for Stock Experiments. (*b*) Fruits will be thinned to 2 and fruits at each fruit spur against no thinning. (*c*) Operations will be done twice annually.	Same as in the 4th year.
7. Hybridization Experiments and seedling trials.	...	...	...	...	Suitable parents will be selected after observation of the performance of the different varieties given in the varietal plots.
8. Experiments on pests and diseases.	(i) Planting and attending to routine operations.	Same as for Stock Experiments. Inoculation of diseases and observations.	Same as in the 2nd year. ...	(*a*) Same as in 3rd year. (*b*) All observations on fruiting capacity of plant.	Same as in the 4th year.

STATEMENT No. II.

PROGRAMME OF WORK.

Pine Apple.

Experiments	First Year	Second Year	Third Year	Fourth Year	Fifth Year
1. Varietal Trials.	(*a*) Planting suckers (*b*) Attending to routine operations.	(*a*) Harvesting of crops. (*b*) Observations on time of flowering rate of development of fruit, time of fruiting, colour, weight, flavour, texture, etc. Suckering habit of the varieties to be noted. (*c*) Attending to routine operations.	(*a*) Same as in the second year. (*b*) Thinning of suckers.	Same as in the third year.	Same as in the third year.
2. Spacing trials.	Do ...	Do ...	Do ...	Do ...	Do
3. Manurial Experiments.	Do ... applying different dozes of manure.	Do	Do	Do ...	Do

STATEMENT No. III.

Programme of Work.

Miscellaneous Fruits.

Experiments	First Year	Second Year	Third Year	Fourth Year	Fifth Year
1. Varietal Trials.	(*a*) Planting will be taken up as far as possible during first year. (*b*) Attending to routine operations. (*c*) Propagation trials will be made.	(*a*) Planting if new varieties of any kind are available. (*b*) Noting down flowering and fruiting time, colour, weight, flavour, texture, etc., of fruits, if any plant comes to bearing. (*c*) Susceptibility or otherwise of plants to pests and diseases.	(*a*) Same as in the second year.	Same as in the second year.	Same as in the second year.

L. S. Dorasami,
Offg. *Superintendent,*
Government Gardens in Mysore.

WD 2210—GPB—100—23-6-37.

FRUIT RESEARCH SCHEME IN MYSORE.

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B. PINE APPLES	4
C. MISCELLANEOUS FRUITS	5
STATEMENTS :—	
LIST OF APPLES FOR TRIAL	9—10
LIST OF OTHER FRUITS FOR TRIAL	10
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FRUIT RESEARCH SCHEME IN MYSORE.

Introduction.

The scheme, as sanctioned by the Imperial Council of Agricultural Research, proposes an extent of 45 acres, out of which 25 acres come under apples and 20 acres under miscellaneous fruits including pine apple.

The site for the Fruit Research Station has been selected in the village of Aivarakhandapur in close proximity to the Hessarghatta Reservoir, about 18 miles by a motorable road from Bangalore, and six miles from the Chikbanavar Railway Station on the Bangalore—Poona line. A piece of land, 50 acres in extent, having a gentle slope with a deep loamy soil and subsoil and capable of further extension has been selected. The value of the land has been estimated (at Rs. 250 per acre) Rs. 12,500.

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TECHNICAL PROGRAMME OF WORK.

I. Apples.

The general layout for apples in all the experiments will be as follows,—Distance between plants will be 15 feet, distance between rows 15 feet and the margin between plots will be six feet.

Experiments in stocks.—These experiments will be conducted with a view to studying the suitability of various stocks, their influence on growth, production and resistance to diseases.

(*a*) Rome Beauty will be grafted on nine important stocks. The plots will be laid out in Latin square method, with ten plants in each plant or row. The stock will be arranged in two groups of five varieties with Northern Spy as check.

Group I.	*Group II*
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2. Paradise	2. D Very Vigorous XII
3. Crab	3. Do XIV
4. Semi Dwarfing II	4. Do XV
5. A Very Dwarfing IX	5. C Vigorous Broad-leaved English I.

Total number of plants required will be 500 and the area of the experimental block will be 3 acres and 16 guntas (One Gunta=1/40 acre).

(*b*) Stocks available in the local orchards will be inspected and plants which are fifteen to twenty years old, resistant to diseases and vigorous, will be selected, for raising stock plants by forcing them to sucker. The suckers when about ½" in diameter will be transplanted in nursery beds. Rome Beauty will be grafted when the stocks are properly established. The grafted plants ten of each will be planted in rows for study and observation. Area of the experimental block will be about 24 guntas.

The total area thus allotted for stock experiments will be 4 acres. For programme of work see Statement I.

II. Varietal Trials.

At present Rome Beauty is extensively grown as the main type on account of its prolific yield, flavour colour and keeping qualities. This variety will be used as check in the tests.

(*a*) *Critical Tests.*—The following nine of the most important varieties, most of which have given good yield in Bangalore and Mysore, will be tested under Latin Square methods with nine plants in each plot or row. These varieties will be tried in two groups of five varieties with Rome Beauty as check.

Group I.	*Group II.*
1. Rome Beauty check	1. Rome Beauty check
2. Ribston Pippin	2. Kashmiri Ambrai
3. Jonathan	3. Delicious
4. Glengyle Red	4. London Pippin
5. Cox's Orange Pippin.	5. Christmas

Total number of plants to be planted will be five hundred in an area of three acres and sixteen guntas.

(*b*) *Preliminary Trials.*—As there are several good varieties which have never been tried in this locality, preliminary trials will be conducted with a view to selecting the best, and introducing them at a later stage for general cultivation among the orchardmen.

More than seventy-five new introductions (*vide* pages 9-11 for details) will be tried in rows with Rome Beauty as check after every eight varieties. Ten plants of each variety will be planted in a row. The total number of plants for study will be nearly nine hundred.

(*c*) *Preliminary trials of Culinary apples.*—More than twenty-five varieties (*vide* page 11 for details) will be planted for study in an area of nearly three acres. Here as in other cases Rome Beauty will be used as check and ten plants per variety will be planted in single rows.

The total area under varietal trials will be ten acres. Detailed programme of work is given in statement No. I.

III. Manurial Experiments.

The present standard variety—Rome Beauty, will be used for the manurial tests. The whole plot will receive a general dressing of ten tons of farm-yard manure and artificial manures will be given to the plants separately.

The general mixture selected for apples is the one recommended by the British Board of Agriculture, *viz.*. 5 cwts. of ammonium sulphate, 4 cwts. of superphosphate, and 1 cwt. of sulphate of potash, thus giving a dose of 5-6 lbs. of the mixture per plant. Half the suggested dose will be given in the first year, three quarters in the second year, and full dose from the third year onwards.

(a) To test the effect of individual manures and in combination, experiments will be laid in Latin Square method, with nine plants in each plot or row.

Group I.

1. Sheep manure 50 lbs.
2. Ammonium sulphate 2·8 lbs.
3. Superphosphate 2·24 lbs.
4. Sulphate of potash 0·56 lbs.

Group II.

1. Ammonium sulphate and sulphate of potash 3·36 lbs.
2. Ammonium sulphate and superphosphate 5·04 lbs.
3. Superphosphate and sulphate of potash 2·8 lbs.
4. Ammonium sulphate, superphosphate and sulphate of potash 5·6 lbs.
5. Sheep manure 50 lbs.

Distance between two experimental plots will be thirty feet to prevent the interaction of different manures. Apple Christmas will be grown in the guard row. The total area under these experiments will be five acres containing eight hundred plants for observation and study.

(*b*) *Dosage trials.*—These experiments will start from the third year onwards when the plants come to fruiting. The experiments will be laid out in randomised blocks with four replications. Rome Beauty will be used for these trials whilst Apple Christmas will be planted in the guard rows. The whole plot will receive in the beginning ten tons of farm-yard manure.

(1) Half dose at the beginning of the season
(2) Full or normal dose at the beginning of the season.
(3) One and a quarter dose at the beginning of the season.
(4) Half dose after setting of fruits.
(5) Full or normal dose after setting of fruits.
(6) One and a quarter dose after setting of fruits.

The area occupied for these trials will be two acres and four hundred plants will be under observation. Total area under manurial trials will be 7 acres. For details of the programme of work (*vide* Statement No. I).

IV. Irrigation Experiments.

Experiments will be laid out to ascertain the optimum quantity of water required to produce a successful crop. In addition the manner in which water should be used and intervals at which irrigation should be given will be ascertained. Experiments will be laid out in randomised block method with ten plants in each plot, replicated four times using Rome Beauty as the Standard variety.

(*a*) *Method of irrigation.*—I Ring method 2. Furrow method. The area under method of irrigation will occupy half an acre with eighty plants for observation and study.

(*b*) *Frequency of irrigation.*—Once in 3, 6, 9 and 12 days. This experiment as stated above will be laid out in randomised block method with ten plants in each row replicated four times in an area of one and half acres. About three hundred plants will be under observation.

An area of one and half acres will come under irrigation experiments. Programme of work is detailed in Statement No. I.

V. Pollination Experiments.

One acre will be planted with twenty varieties of apples including Rome Beauty, and observation will be made as to whether the plants are prone to self-fertilisation or cross-fertilisation and whether larger yields are obtained when self fertilised or fertilised by other varieties.

VI. Thinning Experiments.

As thinning is necessary to get good sized fruits, the extent to which thinning is to be practised under local conditions will be tried. About three quarters of an acre will be planted with Rome Beauty and divided into three sections :—

(i) Thinning to two fruits at each—Fruit spur.
(ii) Thinning to three fruits at each—Fruit spur.
(iii) No thinning.

Total area under Pollination and thinning experiments will be 1¾ Acres.

For programme of work for Pollination and thinning experiments see Statement No. I.

VII. Hybridisation.

After studying the performance of the different varieties grown in the Varietal plots, hybridisation work will be undertaken with suitable parents.

VIII. Experiments on Pests and Diseases.

About two acres will be reserved at the end of the Station for planting Apples and other fruits, for inoculation and other mycological and entomological experiments.

B. Pine Apples.

The cultivation of Pine-apple in the State is limited and fruits of improved variety grown locally develop a good flavour. New varieties will be imported and tried on the Fruit Research Station.

I. Varietal Trials.

(*a*) *Critical Trials.*—Six varieties will be tried under Latin Square method :—1. Queen, 2. Kew Giant, 3. Smooth Cayenne, 4. Mauritius. 5. West Indian, 6. Ripley Queen. The distance between suckers will be three feet and the rows will be four feet apart. Area of each plot of one variety will be one gunta, and the total area under this experiment will be one acre.

(*b*) *Preliminary Trials.*—Indigenous varieties obtainable from Hassan, Channapatna, Singapore and the West Coast will be tried in line rows in an area of half an acre.

2. Spacing Trials.

In one half of an acre, experiments will be laid out planting the suckers (1) planting at 3′ × 4′ and (2) planting two rows at 3′ × 4′ with a space of five feet followed by a double row of suckers at 3′ × 4′. There will be eight replications.

3. Manurial Experiments.

The variety Queen will be used for this experiment and laid out in randomised block method. Distance between plants will be three feet and distance between rows of four feet. Each manurial treatment will occupy one gunta (1/40 acre), totalling one acre for the experiment.

The following manurial treatments will be attempted :—

1.	Cattle manure	....	5 lbs—control.
2.	Do	....	+Hongey cake—2 lbs.
3.	Do	....	+ do —2½ lbs.
4.	Do	....	+1¼ lbs. of mixture of (*a*) ammonium sulphate (*b*) superphosphate and (*c*) sulphate of potash in the proportion of 8:10:15.
5.	Do	....	+¾ lbs. of the mixture, or $\frac{a, b, c,}{2}$
6.	Do	....	+*a* and *c*.
7.	Do	....	+*b* and *c*.
8.	Do	....	+*a* and *b*.

Total area under pine apple cultivation will be three acres.

For programme of work see Statement No. II.

C. Miscellaneous Fruits.

About eighteen varieties of Miscellaneous fruit plants will be planted in an area of seventeen acres.

(1) *Guavas* (Psidium Guava).—Several seedling varieties of the State, varieties from Sind, Bombay, Kurnool, Allahabad and Benares will be tried. An attempt to do grafting and budding experiments will be taken up.

(2) *Custard Apple.*—(Anona reticulata)—well known local varieties from Nandi and Pavagada will be planted along with imported ones from Hyderabad and Bombay. The following varieties will also be tried on the Fruit Research Station.—Anona cherimolia, A. muricata, A. squamosa.

(3) *Pomegranates.*—Mysore has several good varieties under cultivation. Varieties grown in places like Sarakki, Jaraganahalli, Chintamani and Madhugiri are famous. Varieties from the above localities will be tried along with other imported ones, such as—

1. Wonderful,
2. Bedona,
3. Spanish Ruby,
4. Rhoda and
5. Paper shell.

(4) *Jack fruit.*—(Artocarpus integrifolia). Best local varieties having either yellow or saffron flesh will be collected and planted along with some imported varieties from S. India and Ceylon.

Bread Fruit.—Artocarpus incisa.

Good imported varieties from West Indies and from firms of repute in India and Ceylon will be tried. Both the Jack and Bread fruit will be planted as a wind break here and there.

(5) *Figs.*—As Figs grow well in Bangalore the reputed Ganjam figs will be tried here along with other imported from outside such as White Adriatic, Genoa White, Genoa Black and others.

(6) *Peaches*: (Persica vulgaris) :—Peaches thrive well in Bangalore and the most vigorous ones are the seedlings. Varieties from Saharanpur (N. India), Duke of York, Okhahama Queen and other varieties will be tried.

(7) *Pears.*—Pyrnes communis :—Varieties which grow well in Simla and Ooty will be tried along Pears grafted on Pears and imported from Australia and Africa. December, Sweet Saffraon, Beurre Bose, Buerre Hardy and other important varieties will be tried. Pears grafted on Quince stock will also be tried.

(8) *Sapodilla.*—(Achras Sapota) : Sapodillas grow well in this locality. The round oblong varieties grown in Calcutta, Poona, Madras and other places will be tried and along with varieties from Tropical America and West Indies.

(9) *Rose apple*: Euginea Jambos.—Best varieties will be collected and tried and planted in the Research Station as wind breaks.

(10) *Papaya*: Carica papaya.—The following varieties will be tried.—Washington, Singapore, Ceylon, Honey Dew, Mammoth Java and Phillippines.

(11) *Litchi.*—Some very good specimen of plants found locally will be tried. Plants from Calcutta will also be experimented with.

(12) *Zizyphus.*—Local and Kassipore varieties which are popular will be grown for multiplication and distribution.

(13) Varieties of strawberries, raspberries and currants and blackberry will be tried as cover crops.

(14) *Mulberries.*—Edible varieties of mulberries will be grown as bush plants to provide wind screens.

(15) *Avocado.*—Persea gratissima :—About five varieties will be tried in the Station.

VARIETIES OF FRUITS TO BE TRIED ON THE FRUIT RESEARCH STATION IN MYSORE.

I. Apples.

(*a*) *Desert Apples.*

Early Harvest
Sharp's Early
Blenheim Orange Pippin
Devonshire Quarrendon
Worcester Pearmain
Red Astrican
William's Favourite
Beauty of Bath
Summer King
Ben Davis
Cliff's seedling
Esopus Spitzenburg
Lalla
Monmouth Pippin
Irish Peach
Loy
Newman seedling
Primrose Bismark
Rhode Island Greening
Versfelds
White Winter Pearmain
Crofton Pearmain
Dougherty
Crimes Golden
Hover
Scarlet Pearmain
Sharp's Late Red
Sturmer Pippin
Yapeen Seedling
Upton Pyne
Red Victoria
Bridget
Duchess of Bedford
Wintersterne
Reinette Zuccamaybo
Baldwin
Claygate Pearman
Owen Thomas
King of the Pippins
Commerce
Granny Smith
Laxton
Nickajack
King David
McIntosh Red
Peasgoods nonsuch
Munroe's Favourite
Rokewood
Wemmer's Hock
William Anderson
Democrat
General Carrington
Henry Clay
Rymer
Senator
Springdale
Willie Sharp
Sarispareil
Monarch
Ponsford
Clerk's seedling
Wanstall seedling
Colville Blanc
Belle-de-Boscop
Boscomb's Mystery
Yates
Fearns Pippin
Early Peach
American Mother
Golden Russette
Washington
The Sandringham
The Queen
Braddick's Nonpareil
Egremont Russet

(*b*) *Culinary Apples.*

Emperor Alexander
Lord Nelson
Prince Alfred
Royal Late Cooking
Bismark
Lord Grosvenor
Sterling Castle
Graveinstein
Lord Wolesley
Red Statesman
Lane's Prince Albert
Newton Wonder
Dumelow's seedling
New Northern Greening
Warner King
Golden Noble
New Hawthomdon
Duchess of Owenberg
Royal Russet
Potts seedling

II. Pine Apple.

1. Queen
2. Kew Giant
3. Smooth Cayenne
4. Mauritius
5. West Indian
6. Ripley Queen

MISCELLANEOUS FRUITS.

III. Guavas.

1. Varieties from Bangalore, Bombay, Benarese, Sind and Allahabad.
2. Psidium Cattleyanum
3. Do guinensis
4. Do possiferum

IV. Custard Apple.

1. Anona reticulata
2. Do cherimolia
3. Anona muricata
4. Do squamosa

V. Pomegranates.

1. Local varieties from Sarakki, Jaraganahalli, Chintamani, and Madhugiri.
2. Wonderful
3. Bedona
4. Spanish Ruby
5. Rhoda
6. Paper shell

VI. Figs.

1. Local Ganjam variety
2. White Adriatic
3. White Genoa
4. Black Genoa
5. Castle Kennedy
6. Tiger
7. Kadota
8. Calimyrara

VII. Peaches.

1. Shampur (N. India)
2. Duke of York
3. Okhama Queen
4. May Flower
5. Marley Rovers
6. Elberta
7. Brook
8. Killie Krankie
9. Florida Crawford

VIII. Pears.

1. December
2. Sweet Safraon
3. Beurre Bose
4. Beurre Hardy
5. Beurre Superfine
6. Easter Beurre
7. Keiffer Hybrid
8. Vicar of Wakefield
9. Winter Neld
10. Packham's Triumph
11. Josephine de Malenas

IX. Papaya.

1. Local varieties
2. Washington
3. Singapore
4. Ceylon
5. Honey Dew
6. Mammoth Java
7. Phillippines

X. Strawberries.

1. Royal Sovereign
2. Melba
3. Illiawara

XI. Blackberries.

1. Evergreen
2. Himalayan

XII. Avocado.

1. Trap
2. Pollock
3. Dickson
4. Dutton
5. Lyon

L. S. Dorasami,
Offg. *Superintendent,*
Government Gardens in Mysore.

STATEMENT No. I.

PROGRAMME OF WORK.

Apples.

Experiments	First year	Second year	Third year	Fourth year	Fifth year
1. Stock Experiment.	(*a*) Planting stocks. (*b*) Rearing and attending to other operations.	The following observations will be made :— (*a*) Attending to routine operations. (*b*) Girth of stem (*c*) Spread of plant. (*d*) Height of plant. (*e*) Rate of growth. (*f*) Resistance to pests and diseases and drought conditions. (*g*) All plants fit for grafting will be grafted with Rome Beauty.	Same as in the 2nd year.	(*a*) The observations made in the previous year will be continued. Besides the following observations will be made as the plants come to bearing. (*b*) Examination of floral structure. (*c*) Time of flowering. (*d*) Time of setting. (*e*) Time of harvesting. (*f*) Yield (Individual Tree Record). (*g*) Weight of fruit (*h*) Colour ... (*i*) Flavour and taste. (*j*) Texture.	Same as in previous years.
2. Varietal Trials.	(*a*) Planting all the available vars. (*b*) Attending to shaping and other routine operations.	Same as for Stock experiments except Item (*g*).	Same as above ...	Same as above ...	Same as above.
3. Manurial Experiments.	(*a*) Planting ... (*b*) Attending to shaping and other routine operations. (*c*) Manuring as detailed in the body of the report.	(*a*) Three-fourth normal doze of manure will be applied. (*b*) Same as for stock experiments (except Item *g*).	(*a*) Normal dose of manure will be applied. (*b*) For dosage trials the different doses of manure will be tried before flowering and after setting of fruits. (*c*) Observations same as for Stock Experiments.	Same as in the 3rd year.	Same as in the 3rd year.
4. Irrigation Experiments.	(*a*) Planting and attending to other routine works. (*b*) Irrigations by Ring and Furrow method. (*c*) Irrigation at different intervals.	Same as for Stock Experiments except Item (*g*).	Same as for Stock Experiments.	Same as for Stock Experiments.	Same as for Stock Experiments.
5. Pollination Experiments.	Same as for Varietal Experiments.	Same as for Stock Experiments except Item (*g*).	Same as for Stock Experiments.	Same as for Stock Experiments. (*a*) Half the No. of plants will be left open for natural pollination and the other half under controlled pollination.	Same as in the 4th year.

STATEMENT No. I—*contd.*

Experiments	First year	Second year	Third year	Fourth year	Fifth year
6. Thinning Experiments.	Planting and attending to routine operations.	Same as for Stock Experiments.	Same as for Stock Experiments.	(*a*) Same as for Stock Experiments. (*b*) Fruits will be thinned 2 and 3 fruits at each fruit spur against no thinning. (*c*) Operations will be done twice annually.	Same as in the 4th year.
7. Hybridization Experiments and seedling trials.	...	...	...	...	Suitable parents will be selected after observation of the performance of the different varieties given in the varietal plots.
8. Experiments on Pests and Diseases.	(i) Planting and attending to routine operations.	Same as for Stock Experiments. Inoculation of diseases and observations.	Same as in the 2nd year. ...	(*a*) Same as in 3rd year. (*b*) All observations on Fruiting capacity of plant.	Same as in the 4th year.

STATEMENT No. II.

PROGRAMME OF WORK.

Pine Apple.

Experiments	First Year	Second Year	Third Year	Fourth Year	Fifth Year
1. Varietal Trials.	(*a*) Planting suckers (*b*) Attending to routine operations.	(*a*) Harvesting of crops. (*b*) Observations on time of flowering rate of development of fruit, time of fruiting, colour, weight, flavour, texture, etc. Suckering habit of the varieties to be noted. (*c*) Attending to routine operations.	(*a*) Same as in the second year. (*b*) Thinning of suckers.	Same as in the third year.	Same as in the third year.
2. Spacing trials.	Do ...	Do ...	Do ...	Do ...	Do
3. Manurial Experiments.	Do ... applying different dozes of manure.	Do	Do	Do ...	Do

STATEMENT No. III.

PROGRAMME OF WORK.

Miscellaneous Fruits

Experiments	First year	Second year	Third year	Fourth year	Fifth year
1. Varietal Trials.	(*a*) Planting will be taken up as far as possible during first year. (*b*) Attending to routine operations. (*c*) Propagation trials will be made.	(*a*) Planting if new varieties of any kind are available. (*b*) Noting down flowering and fruiting time, color, weight, flavour, texture, etc., of fruits, if any plant comes to bearing (*c*) Susceptibility or otherwise of plants to pests and diseases.	(*a*) Same as in the second year.	Same as in the second year.	Same as in the second year.

L. S. DORASAMI,
Offg. *Superintendent,*
Government Gardens in Mysore.

WD 2210—GPB— —8-6-37.

Code: 4th Edition A.B.C.
Telegraphic Address
"Agri., Bangalore."

DEPARTMENT OF AGRICULTURE,
MYSORE STATE.

28 APR. 1937
DEVELOPMENT BOARD

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B. NARASIMHA IYENGAR, Esq., B.A., Ph.D.,
Director.

OFFICE OF THE DIRECTOR OF AGRICULTURE,
Bangalore, 24th April 193 7.

Urgent.
SECRETARY
27. APR 1937
GOVT. OF MYSORE

G. G. No. 65-35-13

Dear Mr. Kesavaiengar,

With reference to Government Order No.D.5760-64/GG 65-35-9 dated 26/27th February 1937 about Fruit Research Scheme in Mysore, I am sending herewith a note drawn up by Dr. V. K. Badami. To fix up the various items of work to be taken one after another and also the responsibility for each item, I think it desirable to call for a meeting at which both Dr. V.K.Badami and Dr. L.S. Dorasami should be present.

It seems necessary to take immediate steps to get the necessary planting material and settle as to who should get it and take care of it.

Manurial and irrigation experiments with apples can only be started a couple of years later when the plants have got established.

Yours sincerely,

B. Narasimhaiyengar

B. T. Kesavaiengar, Esq., B.A.,
Chief Secretary to the Government
of Mysore, Bangalore.

Technical Programme of work
F o r
The Fruit Research Station at Hesaraghatta,
Mysore State.

(Abstract)

Location:- At Hesaraghatta about 18 miles from Bangalore. Elevation about 2900 ft. The Reservoir will supply water.

Land:- About 50 acres of good flat red loamy fields will be acquired now. The station can be easily extended to over 150 acres. The value of land will be met by the Government of Mysore. Cost of 50 acres will be about Rs.12,500

Buildings:- Quarters for the staff, Laboratory and farm buildings will be built by the Government of Mysore at a cost of Rs.40,000/- now.

Finances- The contribution made by the Imperial Council of Agricultural Research is Rs.46,000/- for five years. All other expenses would be met by the Government of Mysore. Cost of buildings and lands alone will be about Rs.62,500/-. In addition, work on Mangoes, Citrus fruits and the maintenance of sub-stations will cost at least another sum of Rs.30,000, when the work is in full swing.

Work:- Crops- financed by the Imperial Council of Agricultural Research:-

A;- Invcstigations of Apples and Pine Apples-25 acres.

I. 1. Apples- Varietal tests of various wellknown varieties.

2. Manurial Experiments.- a. Requirement
b. Dosage.

3. Pollination Experiments, Pruning and thinning, testing of various stocks.

4. Preservation of fruits, grading and marketting.

5. Study of Diseases and pests.

II. Pine Apple -- Collection of different varieties and testing them in different localities in the State.

B. Miscellaneous Fruits :- 20 acres.
Varieties will be collected for observation .

I. Trees--Guavas, Jack fruits, Eugenias, Rose apple, Malaya apple, Bread fruits, Sapodilla, Litchi, Butter fruit, Zizyphus, Myrobalans, Kamarak, Bastard Almond and dates.

II. Bush fruits:- (a). Custard apple, Pomeganates, figs and dates.

(b) Peaches, Pears, Plums, Apricots, Cherries.

III. Cariosa and Grapes.

IV. Inter-crops and cover crops: Papayas, Tomatoes, Strawberries, currants and gooseberries, Raspberries, Melons and water melons.

Crops in which Mysore State is greatly interested are as follows:-

I. Citrus Fruits:-

1. Varietal tests
2. Manurial Tests
3. Grafting and budding experiments.
4. Study of diseases and pests.

sub-stations at --Yemmedoddi, Hassan District and West Hunsur Taluk.

II. Mangoes:-

1. Collection of Indian and exotic varieties.
2. Collection of all reputed seedling plants in the State.
3. Grafting and budding experiments and seedling work. Hybridisation work also will be attempted.
4. Manurial experiments.
5. Study of diseases and pests.
6. Financing and improving improvement of market conditions.

III. Plantains:-

1. Collection of all indegenous and exotic varieties.

2. Varietal trials in the Malnads, Channel tracts and under Tanks in the eastern part.

3. Preservation and marketting of fruits.

4. Study of pests and diseases.

In the work of preservation of fruits much preliminary work has to be undertaken by the Bio-chemist. The study of diseases and pests also requires immediate strengthening of the sections in the Agricultural Department. Whole time men are required. The Department of Industries and Co-operation will have to take up the question of providing cheap money as crop loans--and providing efficient agencies.

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Technical Programme of work to be conducted on the Fruit Research Station at Hesaraghatta .

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The salubrious climate of the plateau of Mysore is very well suited for the cultivation of tropical, sub-tropical and, to some extent, temperate fruits. There is already a large export of fruits. Apples, mangoes and the sub-tropical fruits thrive round Bangalore and oranges and pineapple in the Malnad areas. Plantains and other fruits flourish all over the State, where facilities for irrigation exist.

The Central Fruit Research Station will be located at Hesaraghatta near the reservoir and it is proposed to deal with all problems connected with Fruit Research on this Station.

The Imperial Council of Agricultural Research have granted a lump sum grant of Rs.46,000/- to conduct investigations on apples, pine apples and miscellaneous fruit trees for a period of five years. The Government of Mysore propose purchasing the land, putting up buildings and bearing all the other extra items of expenditure amounting to nearly a lakh of rupees when the scheme is in full working order. As mangoes and oranges are very important fruits in the state, the Government of Mysore are taking up work on these fruits also. Varietal and manurial experiments conducted in northern India under different ecological conditions are not likely to yield much useful information for this state. An attempt is made in this note to survey the present situation briefly and indicate the lines on which work will have to be started and continued. In connection with these permanent and long duration crops a well considered and fixed policy and a detailed programme are quite essential. It is only then that periodical reviews could be made to assess the progress made.

After a thorough examination of the various aspects of the scheme and inspection of sites in several places, the present site near the Hesaraghatta reservoir ~~xxxxxxx~~ has been selected.

The Reservoir is 18 miles from Bangalore and about 8 miles from the nearest Railway Station of Chikbanavara. The station is 12 miles from Bangalore on the meter gauge-line on the Bangalore-Poona M.& S.M. Railway. There is a good road leading to the lake. Many villages are present round about which can easily supply the labour required. The buildings, Laboratories and the Farm quarters might be put up by Government on the Station itself. Electrical energy and lighting might also be provided. The locality is ~~pictures~~ picturesque and healthy.

Hesaraghatta Reservoir does not supply Bangalore with water now and there is practically an unlimited supply of irrigation water for the orchard. From the Channel water will have to be pumped for irrigation. The area near the rest house is a flat expanse of over 100 acres in extent out of which 50 acres might be acquired for the present. The soil is a deep red loam with good drainage. There is a gentle slope and the soil and sub-soil seem to be uniform over the whole area affording very good conditions for laying out plots in a manner suitable for the interpretation of results according to approved statistical methods.

The soil has had uniform crops of ragi and mixed lines of legumes in previous years. There are no trees or bushes any where. Thorough cultivation to remove stubbles and diggings pits for plants will have to be given immediately. As this is a wide plain, wind breaks and live fences are necessary to give protection to fruit plants which should be planted early. The whole area should be fenced properly to give protection against tresspass by village cattle.

An examination of the soil and the sub-soil has given the following results.

Mechanical Analysis:-

	Soil.-9"	Subsoil-9"	Aggod orchard soil in England. Hertfordshire. Dr. Voelcker.
Moisture	1.070	6.80	
Clay	14.60	29.30	
Silt	5.80	9.80	Sand etc.
Very fine sand	4.90	6.60	77.4
Fine medium sand ..	60.80	45.30	45.30
Coarse Sand ..	9.50	6.30	
Fine gravel	4.40	2.70	
Texture of soil	Sandy loam.	Sandy clay.	

Chemical Analysis:-

Organic & Volatile matter.	2.50	6.73	6.34
Nitrogen (N)	0.042	0.055	0.100
Total P_2O_5	0.547	0.0357	0.204
Cit.Sol. P_2O_5	0.012	0.0008	--
% Cit.Sol. in total P_2O_5	22.000	2.300	..
Exchangeable Calcium	0.09	0.168	Total. 3.312
Exchangeable Potassium	0.0219	0.0194	Total. 0.468
P.H. Value	6.5	6.0	..

(Analysis by Mr. M. Subbiah- Agricultural Deptt.)
25-7-1936.

In order to preserve and improve the texture of the soil green manure crops should be grown and ploughed under. Ten to fifteen tons of farm yard manure should be given annually as a general dressing for the whole orchard. Periodic application of lime and necessary doses of phosphoric acid should be applied for each crop. At present detailed investigations might be taken on hand only on apples.

Material for planting should be obtained from Europe and Australia immediately. East Malling Fruit Research Station in England and Firms of repute should be requisitioned to supply the plants. Local varieties should be collected here alone.

Details of experiments concerning every crop are given later in this note. At present, Apple alone might be taken up for intensive study. When sufficient material is available the other fruit plants might be brought under thorough investigation on the sub-stations.

Generally, varieties, suitability of various stocks and their influence on growth and production and resistance to drought and diseases should be studied. The manurial requirements of crops might be studied on after another as time and facilities permit. Those which are now mainly grown from seeds should be propagated by grafting and budding to improve the bearing capacity and quality. Varieties which have been long propagated vegetatively like mangoes, should be selected for raising new varieties by means of selection of seedlings.

Attention should also be paid to irrigation problems and methods of cultivation. Pruning and thinning of fruits to induce bearing of good fruits should be attempted in all fruit plants. Records should be maintained about the habit of the plant, its relation to climatic conditions and the response it makes to treatment given. When large quantities are grown, their keeping qualities will have to be tudied to find out how they behave under storage and transit. Some of these problems will have to be studied by the Bio-chemist to find out the changes that take place in stored fruits.

The station should also maintain regular records of crop yields and cultivation expenses to furnish detailed information to growers. Grading, packing and marketting problems will have to be seriously taken up by the Departments of Industry and Co-operation. Middle men may even be avoided by providing storage facilities and arranging for Trade Agents in Bombay, Calcutta, Madras and Delhi which are our big fruit markets now.

There are many plant diseases and insect pests which require immediate attention. It is rather doubtful if the present staff of the Agricultural Department is adequate to take up the investigations immediately. Full time assistants are quite necessary to carry on the investigations and suggest suitable remedies as and when problems arise.

8

The Imperial Council of Agricultural Research have sanctioned the grant for Apple, Pine apple and miscellaneous fruits. I have tried to give a comprehensive programme for all fruits which require thorough and systematic attention immediately. As there is a large area available for further extension of the Fruit Research Station it will not be difficult to expand the activities.

The following detailed programme has been drawn up to give a definite lead to workers in order that there may be a continuity of policy and lines on which the work might be started The programme is made quite elastic to give scope for an individual to use his discretion wherever necessary.

A P P L E S.

Manurial Experiments:-

The present standard variety, Rome Beauty, will be used for the manurial tests. Rome Beauty budded on Northern Spy should be imported from Australia for planting. The whole plot should receive a genefal dressing of ten tons of farm yard manure and artificial manures should be given to the plants separately by spreading round the trees in the ring of the area irrigated. Irrigation should be round each plant and be given as required Manures should be applied once for each crop during the year.

The general mixture selected for apples is the one recommended by the British Board of Agriculture. Variations in doses and different proportions of Nitrogen, Phosphoric acid and potash should be tried.

Experiment A:- Various doses of standard mixture:-
The mixture selected might be as follows:-

5 Cwt. of Ammonium Sulphate

4 Cwts. of Super Phosphate

1 Cwts of Potassium Sulphate.

This will give about 5.6 lbs of mixture to every plant. It is proposed to give ½ the suggested dose in the first year,

¾ of the dose in the second year and the full dose in the third year. The regular experiment will thus start in the third year when the plants begin to flower and bear. In the beginning, rate of the growth should be watched and yields noted later when the plants begin to bear.

Plan:- ~~25~~ 25 plants planted 15' x 15' apart will form a unit. For each experiment there will be four plots in the Latin Square and the total area required would be 2 acres.

1. Check -- only sheep manure, one big basket load.
2. Mixture - ½ dose , ½ of 5.6 lbs. of mixture.
3. Mixture - 1 dose , Full or 5.6 lbs. mixture.
4. Mixture - 1½ dose, 8.4 lbs of mixture.

Experiment B.:- Time of application-- 25 plants should be alloted for each experiment and every plant studied separately. Distance of planting will be 15' x 15' either way. General dose of farm yard manure should be given for the whole plot. Area required would be ½ an acre.

Plan:-

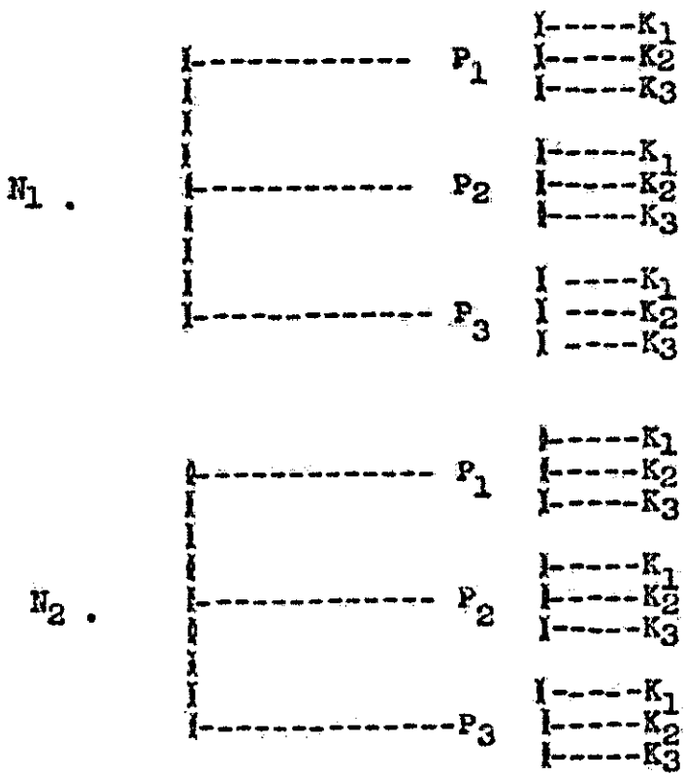
1. Full dose of mixture at the beginning of each Season.
2. Application of Am_2SO_4 a week before the leaves are removed and Superphosphate and potash given soon after the crop is removed.
3. ½ the mixture given in the beginning of the season and ½ the mixture given when the fruits have begun to set.
4. 1/3. the mixture in the beginning and 1/3. the mixture after setting of fruits and 1/8. after they begin to develop.

Experiment C.:- To find out the effect of varying proportions of Nitrogen, Potash and Phosphorus in the mixture of the manure, on crop production. Rome Beauty will be planted. Each plant will be a unit; thus 25 observations will be made for each treatment.

~~2. 18 plots of 25 plants or 18 rows of 25~~

2. 18 plots of 25 plants or 18 rows of 25 plants in each row will be used for the experiments. Area required is 2¼ acres.

3. The plan of the various combinations of N.K.P. to be used is as follows:-



Note:- N_1 = 3 cwts. of Ammonium sulphate bearing 50 lbs. of Nitrogen.

P_1 = 3 cwts. of superphosphate having 50 lbs. of Phosphoric acid.

K_1 = 1 cwt. of potassium sulphate having 50 lbs. of potash.

4. In all these experiments it is hoped to obtain information regarding the composition of the mixture, the dosage of the mixtures and the time of application.

5. For the present, organic manures such as cakes or Bone meal are left out of consideration and they should be taken up when more information is available regarding the manurial requirements of the apple plant in this State.

A P P L E S . (Varietal Trials)

Nearly fifty ~~varities~~ varieties have been tested in Mysore during the last 80 years. Once Ribston Peppin was very popular. At present Rome Beauty is extensively grown as the main type on account of its prolific yields and colour. It has also got good keeping qualities. This variety should be used as a control or check in the tests. Plants should be planted 15' apart in rows. From row to row a distance of of 15' should be given. If 20 plants are planted in each row for a variety the area will be about 1/10. acre. Plants will be imported from East Maling Station, England, and South Africa, and Australia

A. Dessert Apples:- Six of the best ones.

1. Rome Beauty.
2. Beauty of Bath
3. Cox's Orange Peppin
4. Devonshire Quarrenden
5. Fearus Peppin
6. Worcester Pearmain.

Each variety will be tested in three rows. Area required is 1.8 acres.

B. Culinary Apples; Six of the best ones.

1. Bismark
2. Lams Prince Albert.
3. Lord Grosvenor
4. Newton wonder.
5. Sterling Castle.
6. Rome Beauty -Check.

Repeated 3 times in 1.8 acres.

C. Dessert and culinary apples:- Six of the best ones.

1. Baumanna Red writer Runette
2. Cox's Pomona
3. Gascoyms scarlet seedling.
4. Rosemery Russet
5. wealthy
6. Rome Beauty- Check.

Repeated three times in 1.8 acres.

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Apples.(Varietal trials) :

D. Richly flavoured apples:- Six of the best ones.

1. American Mother
2. Braddicks Nonparcil
3. Egremont Russet
4. Mainingtons Pearmain
5. Nonparcil.
6. Rome Beauty- Check.

Repeated three times in 1.8 acres.

-----Total in 7.2 acrs.
21 varieties for trial.

Total area for the major varietal trials required is 12 acres

In these experiments there will be 20 plants in each row and in five rows the total number of plants will be 100 for each variety. If the yield of every variety is recorded separately the results can be easily made use of for statistical interpretations.

Onetline containing 10 plants should be planted with following varieties:-

Dessert Apples:-

1. Claygate Pearmain
2. Early Peach
3. Keddlestone Peppin
4. King of the Peppins
5. Mabbots Pearmain
6. Roundway Magnum Bonum
7. Sturmur Peppin
8. Golden Russette
9. Mrs. Phillemiore
10. Red Astrachan.

$\frac{1}{8}$ Acre.

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Dessert and Culinary Apples:-

1. Barters Pearmain
2. Blenheim Peppin
3. Dutch Mignone
4. Early Harvest
5. Harleys wiltshire Defiance
6. Hormeads Pearmain
7. Lady Henniker
8. Gloria Mundi
9. Lord Grosvenor
10. Golden Spire.

$\frac{1}{3}$ an acre

Culinary Apples:-

1. Dumelows Seedling.
2. New Northern Greennig
3. New Hawthorndon
4. Potts seedling
5. Royal Russet
6. ~~Warners~~ Warners King
7. Dutches of Oldenberg
8. Emperor Alexander
9. Golden Noble.
10. Seatah House

$\frac{1}{3}$ an acre.

Total $1\frac{1}{3}$ acres and 30 varieties.

Ten specimen plants of the following varieties should also be planted for preliminary observations:-

Dessert Apples:-

1. Charles Ross.
2. Christman Pearmain.
3. Cockles Peppin
4. Early Peaches
5. Lady Sdedely
6. Langley Peppin
7. Ribston Peppin
8. Washington
10. Allington Peppin.
11. Adams Pearmain
12. Early non parcil
13. Ross Nonparcil
14. Scarlet pearmain
15. Dutch Mignonne
16. King of Tompkins County.
17. Lands Berger Reinette.
18. Reinette De Canada
19. Belle de pontoire.
20. Cobham.

Total. 1 acre.

Varietal Trials:-

Dessert & Culinary Apples:-

1. The Queen
2. The Sandringham
3. Golden Spire
4. Granges Pearmain
5. Rhode Island Greening
6. Early Victoria
7. Flanders Peppin
8. Laddington
9. Lord Grosvenor
10. Newton wonder. .. ... an acre.

Culunary Apples:-

1. Mere de Menage
2. New Northern Greening
3. Peas Goods Nonesuch
4. Sugarloaf Peppin
5. White Transparent
6. Bedfordshire Foundling
7. Hambledons Deuxtus
8. Alfriston
9. Annie Elizabeth
10. Ecklin ville
12. Hamblings seedlings
12. Minchul Crab.
13. Potts Seedling.
14. Royal Russet.
15. Seatan House
16. Sterling Castle.
17. Twenty Ounce
18. Cleopatra.
19. General Carrington
20. Lord Nelson.

1 acre.

"Specimen plots" of all available varieties out of the 54 already introduced on various occasions should also be collected and planted. Total 50 varieties in 4 acres.

In all about 100 varieties will be tested. The varieties should be allowed to grow naturally and the season when they flower and the time the fruits take to ripen should be noted. After this information is recorded they wikkxhax should be tested for possibilities of obtaining two crops per year as in the case of Rome Beauty.

Total area required will be 11.2 acres for varietal tests.

Crab apple seedlings and Free Stocks should be grown fk fairly extensively in an acre or two to see if it is possible to evolve vigorous stocks locally to withstand collar rot and root diseases in addition to providing a vigourous root system to the grafts for growing healthy plants.

Seedling and hybridisation work should be taken up only when the varieties have been under observation for a couple of years after they begin to bear.

The most promising ones should be multiplied on the station after five years for distribution to other centres in the -- State for preliminary trials. The mostly likely places where sub-stations might be started are near Hassan and on Kalhathy in the Bababudans.

I R R I G A T I O N .

Irrigation:

To use water economically and to prevent over irrigation the optimum quantity of water required to produce a successful crop should be ascertained. In addition, the manner in which water should be used and intervals at which irrigations should be given should also be ascertained.

1. Method of irrigation.
   - a. Ring Irrigation
   - b. Furrow Irrigation

Rome Beauty should be planted in strips of three rows and the experiments repeated 5 times. In each row 20 plants should be planted. Area required would be 1.8oo or 2 acres.

2. Interval of irrigation:- Rome Beauty should be used for this experiment. Irrigation water should be applied to different strips at various intervals.

a--.. .. 3 days interval		Each strip of 3 rows containing 20 plants in each row should be repeated three times. 36 rows would require 3.6. acres.
b. 6	-do-	
c. 9	-do-	
d. 12	-do-	Total area required would be 5.6 acres.

Pollination Experiment:- Varieties like sterling castle, Lord Grosvenor and Seatan house which bloom freely are said to help the pollination of varieties which set sparsely. Five rows of Rome Beauty should be compared with five rows of Rome Beauty alternated with rows of the above three varieties. Area required would be 1.5 acres.

1. Five rows of Rome Beauty
2. Five rows of Rome Beauty alternated with five rows of three free and fertile bloomers.

Experiments in Pruming and Thinning:- One acre should be planted with Rome Beauty and divided into four portions. Three treatments will be adopted.

1. No treatment--Check.
2. Light thinning.
3. Heavy thinning.
4. Light late thinning.

Experiments in Stocks:- Rome Beauty, Cox's Peppin and Bismark should be budded on 1. Crab, 2. Free stock, 3. Paradise stock and(4).Northern Spy, and tested for vigour and resistence to diseases. Twenty plants of each variety on each kind of stock should be used. Nearly 180 plants or about one acre is necessary.

The total area for all the apple experiments would be about 24.7 acres if the above experiments are laid out.

Pot experiments regarding the water requirement and the manurial needs of the apple plant should also be taken up to secure accurate data.

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P I N E A P P L E.

Pine Apple is grown all over the State to a limited extent. It seems to trk thrive well in the Malnad areas. Already a couple of acres are under observation on the Marthur Farm in Shimoga and at Balehonnur. A few people have successively grown it in the Bangalore District. The fruits of improved varieties grown locally develop good flavour. Old types are still found here and there especially in Hassan district and near Channapatna- They grow well but do not bear fruits early and they have neither the size nor quality.

New varieties should be imported and tested on the Fruit Station. Multiplication and other tests might be continued on the Marthur and Balehonnur Farms in the Malnads.

The following varieties should be included for test immediately as they are readily available :-

1. Mauritius
2. Queen
3. Kew Gaint Pine
4. West Indian
5. Riplly Queen
6. Singapore
7. Local types from Malnad and Channapatna.

The varieties should be tested for production, keeping qualities and flavour.

CITRUS FRUITS.

Orange:- This is an important fruit grown at Yemmedoddi and other places in the State and exported. Areas under orange are being extended in the Hassan District. In addition, large quantities are being imported annually from Bombay Presidency especially Nagapur Orange and Mozambique. A large quantity of Coorg Oranges pass through the State. During the last 10 years large areas have been planted in West Kadur and Hassan districts and they are have begun to bear now. Recently on one sandy day about 90 carts of oranges were sold, each cart having a load of 5000 fruits .

The main centres of orange cultivation are Sakrayapatna, and Yemmedoddi in Kadur District, and Ammghatta in Hassan District. Out of 1200 plants at Sakrayapatna barely a few hundred plants are in a healthy condtion. They are diseased and dying off rapidly. In a few years the whole orchard may disappear. The heavy clay water logged soils are evidently not suited for oranges. At Yemmedoddi, in the thick wooded regions where the red loamy soil is deep the plants are in a flourishing condition. some plants which are over 40 or 50 years old are still bearing a couple of thousand fruits a year. Government have already passed an order to give away land for orange cultivation. Over 20 families of lambanis who know this cultivation have applied for land. Instead of giving lands to a combine or a big landlord it would be better to establish a large number of families in this area .

Investigations have been already started by the irrigation department of the D.P.W. Over 100 orange trees have been planted along with Rasabale behind the rest house. Government have already approved of the idea reserving some land here for opening a Fruit Experimental Orchard. Other varieties of oranges like Washington, Spanish and limes do exceedingly well here. Even apples and peaches make a remarkably good growth here. Especially the woodland to the west of the Rest House is very well suited for starting the work. A farm of 50 acres might be quite sufficient for the area and the work may be immediately taken on hand.

Regarding grafting, much work has already been done by Mr. K.H. Srinivasan, Senior Assistant Director of Agriculture and his Staff on the Balehonnur Farm. Grafts of oranges on orange seedlings and pumalo seedlings have given very interesting results. The grafts on orange seedlings have made better growth than the seedlings of the same age. Grafts on pumalo seedlings have hardly made any growth. In two years the growth is only about 12' whi

the seedlings are merely nearly 4 ft. high. Gooty grafting has been successful.. They seem to root very quickly. The solar-propagator constructed on the farm has enabled them to raise plants from cuttings as well. All these results will be quite useful in starting work on oranges in the State.

Private orchards and Government Gardens and Experimental Stations have already tested a large number of exotic varieties. Orange is therefore an important fruit for the state. Varietal tests conducted else where in India under different ecological conditions of climate, soil and rainfall would not be of any use to the State. It is therefore necessary to start work on this fruit also in addition to the work required by the Imperial Council of Agricultural Research by extending the area of the station.

The following work should be taken up for improving the orange Industry:.

1. Coorg oranges and Yemmedoddi oranges are propagated from seeds. Not much care is paid to the selection of parents in selecting seeds. The seed being poly embryonic, the variation in the vitality of seedlings is large; further the period of maturity in the plants raised from seedlings is longer and deferred. Consequently they begin to bear earlier. The crop from a mixed lot of parents will not be uniform.

To preserve the good qualities of these fruits and to multiply the best strains which are fast disappearing it is very urgent to make plant selections of the best plants and to graft or to bud them on to vigourous stocks.

A collection of selected strains will be maintained on this station and they will be multiplied and transferred to sub-stations at Yemmedoddi, Hassan District and/Cauvery banks bordering Coorg.

2. A collection of Indian varieties of Oranges like-- Kamalapalam, Bathgad, Northern Circars, Maddagiri and Assam Sylhet- will also be made for preliminary observations.

3. Important exotic varieties like - washington navel, Paramette, Valencia, Jappa, Seville, Blood Orange and Chinese Mandarin, will also be tested. In addition, other commercial and well known varieties will be secured. At present over twenty varieties are available for tests in India alone.

As the climatic and soil conditions vary in the three places suggested the actual lists of varieties and their manurial requirements should be conducted on the sub-stations which would be started in those localities as soon as the material for planting in sufficient numbers.

Limes and Lemons:-

A collection of the well known indigenous ones like the Lingadahally limes should be made. In addition, the following exotics should be tested for their ~~g~~ suitability to this area.

1. Eureka	4. Sweet lime	7. Darjeeling lime
2. Lisbon	5. Persian lime	8. Talutian
3. Villa Franca.	6. Sweet rind	9. Dominion Spincless.

Pumelo:-

There are several varieties grown in Mysore. Specially those ~~are~~ of Devanahalli, Hosakote and Closepet are well known. These and others from the Districts famous either for yield, quality or size should be collected for study and multiplication by grafting.

Grape fruits:-

These are growing very well round about Bangalore and the following varieties should be multiplied for distribution.

1. Marsh seedless 2. Triumph 3. Shaddock blood.

Miscellaneous Citrus Fruits:-

Citrons, bitter limes and different vigourous stocks should be collected and tested.

General:- Various methods of propagation by budding, grafting, Layerings and cuttings should be tested for each variety of citrus plant. Fungoid diseases and insect pests should also be studied and measures to check them evolved. The yellowing of the leaf should be investigated.

GRAPES.

The recent ~~increase~~ inroad of Kabul seedless grapes on the market is gradually ruining a large number of grape vine orchards round about Bangalore, By changing the season of pruning the local growers are attempting to find a market at a time when there is no Kabul grapes on the market. The local blue-grape is hardy and produces two good crops a year but it has a thick skin, big seeds and slightly acidy flesh. It requires to be greatly improved by hybridisation with those of better qualities. Of the exotics so far tested, most have been found to do well at Bangalore and produce fruits of good quality. But in the matter of yield and resistance to mildew, anthracnose and other fungoid diseases they are inferior to local grapes.

The following materials should be collected for further work:-

1. Collection of all varieties grown in the State.
2. Introduction of varieties from Nasik and orthern India.
3. Seedless Bedana and other varieties should also be tested.
4. The following exotic varieties should also be tested.

a. Muscat Alexandra
b. Black Hamburg
c. Muscat Hamburg
d. Black Prince
e. Dodrelabi
f. Doredilla
g. Gordo Blanco

Attempts should also be made to graft the exotics on the

local stock to see if any vigour can be imparted to the exotic varieties.

Mangoes:- Mysore has always been famous for its mangoes and there is a large export of these fruits. Bangalore and Srinivasapur taluks have the largest areas and around the district headquarters there are many gardens. Of late, a heavy cutting down of old gardens for fuel is taking place and replanting is not being made in the same proportion. Some of the finest types of Badamis, Malagovas and Rasapuris are fast disappearing from the market. In addition, the large export trade of mangoes- grafts is dwindling on account of unscrupulous dealers selling grafts from doubtful and immature parents. This is a crop which occupies a very important place in our fruit industry and requires to be saved, improved and extended.

Varietal and manurial trials conducted in other parts are not likely to be of any use to our conditions. We have to test them here alone. Older varieties should be collected and new ones should be created. In India, there are over 300 varieties under cultivation and in addition there are some reputed ones in Malaya, Philippines, Jamaica and Florida. A collection of all these should be made in a central place for all future contingencies arising in breeding work. Incidentally, they may be classified and the best of them multiplied for distribution. In Mysore alone there are several plants scattered all over the State which require a careful study The collection made by the famous ruler Sivappa Naik at Nagar some three hundred years ago also deserves attention. Planting 50 plants an acre and having two plants for each variety, we require at least 12 acres for this work.

Improvement of Mango is an important item of work and for the present the collection of varieties should be made.

Manurial treatment and preservation of fruits and marketting probelems might be taken up later.

A: Varietal Tests:-

1. Collection of all indegenous and exotic varieties over 300 in number. Nearly a hundred of them are already available in Bangalore alone in the Palace Gardens and private estates.
2. Selection of the best strains from private estates for preservation and multiplication.

B: Propagation:

At present only approach grafting alone is attempted and this process has great limitations.

(a). Various methods of grafting, and

(b). budding should be tried to find out safe and simple methods of propagation.

C: Methods to ~~remove~~ renovate old gardens should be tested.

Guavas:- There are several seedling varieties in the State. The famous Bangalore grafted Guava is being displaced by the Allahabad guavas. Varieties from Sind, Bombay and Karnool require to be tested. Bangalore Guava requires greater attention and its size, keeping qualities and flavour deserve more attention than is being paid at present.

1. Varieties should be collected.
2. Various methods of grafting and budding should be tested.

Custard Apples:- This plant grows wild all over the State but fruits coming from Nandi and Pavagada are valued for their size and flavour. In addition, good varieties from Hyderabad may also be secured and tested.

Other fruits allied to custard apple like bullock heart (Ramaphal) Cherimoyar and other types wh should also be collected. Varieties ~~should~~ to be tested are Annona squamosa; A. raticulata; A.muricata; A.Cherimolia.

Pomegranates:- Mysore has already several good varieties under cultivation. Sarakki and Jaraganahally near Bangalore, Chintamani in Kolar District and Madhugiri in Tumkur District are famous for their pomegranates. Out of these places Madhugiri is the most important centre where over 200 acres are under this fruit. Since the plants are propagated from seeds and several varieties are grown closely together, there is a large amount of hybridisation going on and consequently there is no uniformity in the product. Much work required to be done in this place. The green fruits which have big juicy seeds have no colour and they are comparatively shy bearers. Those which have size and colour are seedy. A careful selection of good strains and further improvement by hybridisation are quite necessary. A ~~cultural~~ Central fruit station can help them in this work and a sub-station at Madhugiri would multiply the best strains for local distribution.

In addition, varieties from Saharanpur and other parts should be imported and tested. Those from Kabul varieties have failed to flower under our conditions. Attempts should again be made to test carefully these and other varieties from Muscat under controlled conditions.

Jack fruit:- There are several varieties grown in the State and some are well known. Especially those from Arakalgud and Channapatna are highly valued. Occasionally some good strains are reported. In colour of flesh, in size and in texture they vary. If they would be successfully grafted, many valuable strains could be not only saved but be easily multiplied for distribution. Already some have successfully grafted Jack and a collection of the best strains has been attempted at Hebbal.

Further work should be taken up on the following lines:-

1. Collection of Mysore Varieties.

   a. Long fleshed yellow.

   b. Long fleshed Saffron.

   c. Fruits valued in the green stage as a vegetable.

In the above varieties there are fruits which vary in size, seed and texture of flesh. They should also be collected.

2. Varieties from Travancore, Malabar, Ceylon, Malaya, Phillipines, Java and Pacific Isles should be collected.

In addition to the work on Jacks, varieties of Bread-fruit, a nearly related plant to it should also be collected and tested. Some strains are already grown in the State succesafully.

Figs:- All varieties of figs grow well round about Bangalore and in Ganjam near Seringapatam. Schemes are under contemplation to help the fig growers at Ganjam. Testing the local varieties along with the improved ones from Australia and the Mediterranean countries should be taken up. Turkish and Genoa varieties bear well and heavily near Bangalore. They should be multiplied and distributed. Regarding problems connected with irrigation and manuring work u should be taken up at a sub-station in Ganjam when the work is started there

For the present, irrigation and varietal selections should receive more attention.

Varietal Tests:- Six varieties should be tested:-

1. Local Bangalore
2. Local Ganjam
3. Genoa White
4. Genoa Black
5. Turkish Smyrana.
6. Poona-Saswad.

Plantains:- Among imported fruits, plantains form a large proportion. Over Rs.30,0000 worth of fruits are annually imper imported. While large areas are under plantains in the malnads and the cultivation is extending near Nanjangud and Hiriyur, large quantities are being imported from Salem, Erode and

Trichinopally. Organisation of trade, supply of ready money to cultivators, good godowns in Bangalore and Mysore and selling agencies in towns are necessary to find sales for locally grown fruits.

Up to the present about 40 varieties have been tested by the Botanical Gardens. They will have to be properly tested and the best of them multiplied and tried in the out stations before distribution. Facilities for such trials and multiplication exist in several typical areas. The Irwin Canal Farm could be a centre for the new Canal Tracts. Babbur Farm, near Hiriyur can conveniently take up the work for the Vanivilas Sagar area. Marthur and Malehonnur stations can take it up for the Shimoga and Kadur district areas. Preliminary work of collection of varieties and the testing of suitable ones for quality and storing possibilities may be attempted on the Fruit Station.

Question of preparing various products like the preserved banana figs, drying green bananas, preparation of infant food should be taken up in the malnad areas alone under the supervision of a trained Chemist.

Meanwhile the present position of the plantain trade in Bangalore and Mysore will have to be investigated by the department of Industries and Commerce carefully to find out ways and means of stemming the heavy import and providing ~~the~~ cheap and ready money to growers. It may be possible to help them through co-operative agencies by advancing to the ryots crop loans for each year. Collection and sales by a central organisation would facilitate easy recovery of loans every year. These lines are suggested to show that the extension and improvement of the crop depends to a great extent on the stability of marketting conditions which would ensure the cultivator a reasonable returns for his labours and afford him living wages atleast,

Otherwise enormous sums of money will flow out of the country without hindrance. The country can produce this commodity to a large extent, prevent the out flow of money and even bring in a fair amount of profit accruing from steady export .

Varietal trials should be started with some of the following local varieties and collections made from other parts of India.

A: Mysore Plantains..

1. Rasabale
2. Chandrabale
3. Yalakkibale
4. Puttabale
5. Havubale
6. Rajabale
7. Karibale
8. Madhurangabale
9. Vatabale
10. Rasabale of Challakere.
11. Rasabale of Koppa.
12. Rasabale of Nanjangud.
13. Sugandha
14. Rasathali
15. Rasabale of Mangalore.
16. Bangali

Exotics:-

1. Ruswell
2. Meghone
3. Noire
4. Gaban
5. Blane
6. St. Racques
7. Malgache
8. Maritius Green
9. Banganas of west Indies.

B. South Indian Varieties

1. Sirumalai
2. Pachabale
3. Sakkarkeli
4. Anaikomban
5. Nendrapalam
6. Madhura Annun

C. Other Indian Varieties.

1. Savargundi
2. Bankel
3. Sahasrapalli
4. Soknaai
5. Pach Vellam
6. Sonari
7. Kumbica Annan
8. Karuyile
9. Kanher
10. Red
11. Rajeli
12. Mutheli
13. Lal vetchi
14. Safed vetchi
15. Mhasket
16. Govajiri.

In addition to the fruiting varieties there are types which give the fibre of commerce known as manilla hemp. Such varieties thrive well in Bangalore and Mysore and require to be tested out in the Malnads where the conditions are more congenial for their growth. It would in all probabilities give a fairly good cottage industry to the ryots who are in need of small industries to employ themselves during the off season.

Peaches:- Several varieties thrive in Bangalore. The most vigourous ones are the seedlings. They vary much and afford a good opportunity for selection. North Indian varieties from Saharanpur do well here. These and the Australian ones are mostly graft plants. If they are budded on the local seedlings they seem to thrive better. Early Rovers, Elberta abd Triumph along with some fresh imports from Europe might be tested.

Pears:- The following ten varieties have been tested in Bangalore. They have been a partial success. Even the local Berykai grown on the Salem hills do not thrive here. On the Nandi hills they make a good growth. Many varieties merely flower at Bangalore but do not set fruits freely. Probably, trying single varieties at a time might have been the cause for failures. Two years ago in an enclosed space in the Botanical gardens a number of varieties planted closely had set fruits freely and they were of good quality. They may be easily propagated by grafting or budding.

Varieties already tried ~~if~~ should be tested once again.

1. Williamls bon Chretein
2. Jorgonelle
3. Keiffer's Hybrid
4. Howell
5. wilder
6. Packhamls Triumph
7. Clapp's Favourite
8. Doyenne du Comice
9. Vicar of winkfield
10. winter Bartlet.

Cherries, Apricots and Plums:-

Nearly half a dozen varieties of apricots, a few cherries and a dozen plums have been tested. They make a growth and often flower but have not borne fruits successfully. These and peaches and pears seem to required a higher elevation and cooler climate. Many of them are a success on the Niligiris. We are not utilising to the utmost the temperate slopes of the Bababudans for fruit culture. They are higher than Nandi and open spaces with facilities for irrigation during summer are available in several places. To start a substation for testing

these delicate fruits, there is plenty of space and water near the bungalow at Kalhatti. If the trials are successful, all the area between Kalhatti and Kemmangundi can be converted into fruitful gardens. Probably, Coffee estates which have ceased to pay may be profitably converted into orchards. The Sub-Stations at this high altitude is very desirable and necessary.

There are other delicious fruits in Mysore which require attention. The collection of them should be made on the Station and observations should be made regarding their habit of growth and fruiting conditions. well known varieties from all over the State and allied exotic ones should be secured.

1. Eugenias:- There are several varieties of Jambu nerale's in the State. Those of Sakrayapatna and places round Mysore are very popular. They require to be studied and improved. Eugenia Braselensis a red coloured juicy fruit borne on small bushes grows well near Bangalore and deserves distribution in the State.

2. Rose apples and Malaya Rose Apples:- Both these are fine fruits borne on well shaped shady plants. They may do well even as wind breaks. The fruits are a delicacy and require a more extensive cultivation. The varieties available should be grown and multiplied for distribution.

3. Sapodilla:- Grafts from Calcutta do well here and all over the State. On the Babbur Farm in the Vanivilas Sagar area also the plants grow exceedingly well and bear heavily. In Bangalore and Mysore they are a great success. They deserve popularisation in the districts. All the varieties should be collected and multiplied for distribution.

4. Loquots:- These delicious fruits grow well in Mysore and require to be popularised. Varieties should be collected for multiplication and distribution.

5. Litchi:- Varieties of these fruits thrive under Mysore conditions. In Bangalore there are some very good specimens of plants in private gardens. The main varieties should be

be imported from Calcutta for multiplication and distribution.

6. Butter fruit or Avacado pear:- These american fruits do well at Bangalore. There are several varieties under cultivation. As they are rich in fat and the fruit is highly - nutritous they deserve to be multiplied for distribution.

7. Zizyphus:- Local and Kasibore are popular. They will be grown for multiplication and distribution.

8. Carissa Grandiflora:- This was introduced by the late Dr. K. Kunhi Kannan. It is related to the local Kavalekai. There are several varieties of Kavale kai in the malnads requiring selection.

'Kavale Kai' (Carissa Carunduka) is not only a good fruit but is highly valued for pickling purposes. The new big variety from Hawaii has been successfully grown at Hebbal. It will be multiplied for distribution and attempts will be made to select good types in the forests for further improvement. They are thorny plants, popularly called christ's thorn and bear very fragrant flowers. The stragling thick growth of the plant will also afford good material for laying out live fence.

9. Myroblans:- There are many 'nellikai's' fit for multiplication. The fruits are highly valued for pickling. The star goosberry or 'Kirinelly' also is very popular. These also should be multiplied for distribution.

10. Kamrak:- The fruits are sweet or acid. They require to be popularised - specially the sweet ones (Avaroha Carombola) The Bilimbi fruit (Avaroha bilimbi) is a good green fruit fit for pickling. These might also be distributed.

11. Terminalia catapa:- Bastard almond. This tree grows

grows freely in Mysore and affords good shade. It is ornamental and popular. The seeds taste like almonds and deserve wider cultivation.

12. Dates:- There are some stray plants grown all over the State. They are closely allied to Phoenix Sylvestris our toddy palm which thrives so well in Mysore. A few imported plants are doing well in the Botanical Gardens. It is worth while trying a number of varieties from Egypt and Mesopotamia in the dry-hot taluks of Sira and Hiriyur. A collection might be made on the fruit station and when the material is available it should be sent to the Babbur Farm for multiplication and further tests.

Bush trees and cover crops:-

There is a large number of fruit plants used in daily life, which form small bushes and produce fruit largely. They are grown as cover crops, catch crops or planted in the interspaces of permanant orchard plants. Such fruits also should receive attention on this Station.

1. Papaya:- Crops of Papaya should be taken in the orchard until the other fruit plants get established. They not only produce fruits of commerce but will also afford shade to young fruit plants. Attempts should also be made to collect papain. Bangalore grows this fruit to perfection. As it could be easily grown with very little care, it requires to be popularised in the Districts much more than at present.

The following varieties should be multiplied for distribution.

1. Washington
2. Ceylon
3. Honey Dew.
4. Singapore
5. Haumoth Java
6. Philippines,.

2. Tomatoes:- This is already popular in Mysore. Good strains should be introduced and pedigree seeds distributed to the public.

3. Straw berries:- This will be another crop to be grown as an intercrop. Bangalore is well situated to grow it. The following varieties should be tested.-- Royal Sovereign, Melba and Illawara.

4. Currants, Gooseberries; and Cape gooseberries should also receive attention as inter crops.

5. Other inter crops which should receive attention are melons and water melons. Well known varieties should be grown and seeds made available to the public.

6. Raspberries and Logan berries should be grown as hedges Edible varieties of mulberries should be grown as bush plants to provide wind screens.

Fruit growing is a special industry requiring much skill and labour. In order to ensure good fertilisation of in flowers to set heavy crops, bees are wanted. To pick up grubs and other insects, birds are required. In well managed orchards it is always advisable to have a fairly large number of bee hives and poultry. Practically, apiary and poultry are adjuncts to fruit farming. On the Fruit Station arrangements should be made to have both bees and poultry.

With bees and fruits, a few dairy cows and buffaloes, the station can easily demonstrate to the people how intelligent planning and working of an orchard can literally convert estates into land flowing with milk and honey.

---000---

K Badami
12.3.37

9:4 65-35-16 34

Office of the Superintendent,
Govt Gardens in Mysore,
Lalbagh, Bangalore,
Dated, 28th May 1937

No 824
E.1

From

Dr L.S.Doraswami, M.Sc(Lond) Ph.D(Lond),
Offg Superintendent, Govt Gardens in Mysore,
Lalbagh, B a n g a l o r e .

29 MAY 1937
DEVELOPMENT BRANCH

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
B a n g a l o r e .

6596

Sir,

Adverting to G.O.No.D 5760-64/GG 65-35-9 dated 27-2-1937 according administrative sanction to the Fruit Research in Mysore as modified by the Imperial Council of Agricultural Research and calling for a detailed technical programme of work to be carried out under the Scheme for transmission to the Imperial Council of Agricultural Research for their approval, I have the honor to submit herewith the detailed technical programme for necessary actio

I have the honor to be

Sir

Your most obedient servant

L. S. Doraswamy
28/5

Offg Superintendent

35

Immediate. 7th June 1937.

D. 8320 B/one file
Q. 4. 65-35

Dear sir,

The accompanying note on Fruit Research Scheme may kindly be set in type and four clean proofs - - furnished to this office by tomorrow evening 4.30 P.M.

Yours sincerely,

7.6.37

B. Srinivasa Iyengar, Esq., B.A.,
Superintendent, Government Printing.

Urgent

D.O. 8571 E/Gen. 10-6-37

(Dear Mr. Krumbiegal,)

As you may be aware, the Imperial Council of Agricultural Research have sanctioned the Fruit Research Scheme drawn up by Mr. Javariah in 1934 and are giving a grant of Rs. 46200/- spread over a period of 5 years. One of the conditions of the grant is that a detailed technical programme of work for the scheme should be submitted to the Council for their approval. I am desired by the Dewan to enclose herewith ~~a copy of~~ the programme sent up by the Superintendent Government Gardens in this connection and to request you to kindly go through it and favour Government with your suggestions if any. I am to add that a site close to the Hessarghatta reservoir has been selected for the Research station.

The programme may be kindly returned with your remarks.

Thanking you,

(Yours sincerely,)

I am desired by the Dewan to send you herewith a proof copy of the note on the technical programme of work in connection with the Fruit Research Scheme sanctioned by the I.C.A.R and to request you to kindly favour Government with your suggestions in the matter.

Yours sincerely

5.6.37

G. H. KRUMBIEGEL,
ARCHITECT AND TOWNPLANNER.

Devonshire House,
Residency Road,
Bangalore, 14th June 1937

G.G. 15.6.37 15.6.37

Dear Mr Kesavaiengar,

I have your letter No.D 8571 dated 10th instant together with the note on the technical programme of the Fruit Research Scheme.

There are a number of points that might be added such as breeding of suitable stocks in addition to imported and local plants, manure experiments have to be laid down after trees come to bearing - with special reference to improving texture and flavour; under II, Variety trials (page 2) several varieties better than those proposed may be added or substituted, etc. etc.

I am however of opinion that the note is sufficiently - comprehensive and it should be sent off so that the Scheme may not be any longer delayed. Any modification we may make in the course of the - execution will not affect the general programme.

Yours sincerely,

To
B.T.KESAVAIENGAR, ESQ., B.A.,
Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
BANGALORE.

Appendix F G—1]

SUBJECT .....

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Section

File No.

Serial No.

Diary No. of letter replied to.....

No.

~~To~~

The Dir of Agri

Dear Sir,

With reference to Dr. B. Narasimha Iyengars letter No. 2206 Dt. 816-36 dated 20/6/36 forwarding a note by Dr. Bardawil on Jamir Research Station and Hessarghatta I am directed to state that necessary further action may be taken early to call for a meeting at which Dr. Bardawil and Dr. Narasimha may be requested to be present.

General and Revenue Secretariat

( )

the *193*

Date of issue.....

Signed by .....

List of enclosures.....

Copied by .....

Examined by.....

Questions relating to Jamir Research Station may then be treated as urgent.

The note of Dr. Bardawil containing his technical ~~programme of work~~ is returned herewith for reconsideration after such

WD 0521—GPB—30,000—12-3-37

modifications as may
be called for as a result
of discussion at the
proposed meeting

The matter may be kept
open as agreed

Y. S

by
11/5/79

T No. 1416
Encl. 1 file

37

Office of the Superintendent,
Govt Gardens in Mysore,
Lalbagh,
Bangalore, dated, 15th June 1937
Confy

From

Dr L.S.Dorasami, M.Sc(Lond) Ph.D(Lond),
Offg Superintendent, Government Gardens in Mysore.
Lalbagh, Bangalore.

To The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
Bangalore.

Sir,

With reference to your letter No.D 8567 dated 10-6-37, I have the honour to return herewith the proof of the Fruit Research Scheme with necessary corrections after consultation with Mr G.H.Krumbiegel.

I have the honour to be

Sir

Your most obedient servant,

L. S. Dorasami
15/6.

Offg Superintendent

15/6

Appendix F G—1]

SUBJECT .....

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.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *193*

Date of issue 26-6-37

Signed by M.K. Subba Rao

(file prompt separately)

List of enclosures.....

cd-6238 29.1.12-38-S

Copied by

Examined by.....

Section G.G.

File No. 65-35

Serial No. 17

No. D 8801

3 copies

To

The Secretary,

G.C.A.R. ~~Mysore~~

Simla

Sir,

In Continuation of this office Letter no. D. 6076 G.G. 65-35-10 dated 13th March 1937 intimating that the Govt. of H.H. the Maharaja of Mysore have accepted the Scheme for Fruit ~~Cultivation~~ Research in the Mysore State as modified by the G.C.A.R. and with reference to your letter no F. 5-2(16) 37 A dated 27th May 1937 requesting that the technical programme of work under the Scheme

U.K.

referred to above the Govt. is anxious to receive herewith five printed copies of the technical programme and to request that the approval of the Council to the scheme may be communicated to this Govt. shortly. Arrangements are in progress to acquire the lands required for the purpose as a necessary preliminary to the starting of the work.

I have the

D 8802 — MS 2.6.37

copies — by ch. desp.

Copy forwarded 1.6.37 to Govt. of India for favour of information. His attention is invited to para 4 of letter No. F. 201/36/A of 9.6.36 from the Secy. I.C.A.R. Copy of which was forwarded to him with letter No. D. 7963 of 9.6.36-35-2 of 30.6.36 and he is requested to furnish information early as to the probable date of the starting of the scheme and the amount required for expenditure during the current financial year.

Sir

Six printed copies of the Tech. programme are enclosed

MS 2.6.37

ch. desp

by 1.6.37

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No. D 8801/ G.G. 65-35-17 (3 copies)

Dated, Bangalore, 25th (26) June 1937.

From

The *Chief Secretary to the Government of His Highness the Maharaja of Mysore.*

To

The Secretary,
Imperial Council of Agricultural Research,
S I M L A.

Sir,

In continuation of this Office letter No.D.6076/G.G. 65-35-10 dated the 13th March 1937, intimating that the Government of His Highness the Maharaja of Mysore have accepted the Scheme for Fruit Research in the Mysore State as modified by the Imperial Council of Agricultural Research and with reference to your letter No.F.52 (16)/37 A. dated the 27th May 1937, requesting that the technical programme of work under the scheme be sent in duplicate, I am directed to enclose herewith three printed copies of the technical programme and to request that the approval of the Council to the scheme may be communicated to this Government early. Arrangements are in progress to acquire the lands required for the purpose as a necessary preliminary to starting the work.

I have the honour to be,
Sir,
Your most obedient servant,

Sd/- B.T.Kesavaiengar,
Chief Secretary to Government,

K.M.R.3.

Memo No. D 8802 (6 copies) Dated, 25th (26th) June 1937.

Copy of the above, is forwarded, with compliments, to the Superintendent, Government Gardens for information.

His attention is invited to para 4 of letter No.F.241/34/A. dated 9th June 1936 from the Secretary, Imperial Council of Agricultural Research, Copy of which was forwarded to him with letter No.D.7943/G.G.65-35-2 dated the 30th June 1936 and he is requested to furnish information early as to the probable date of the starting of the scheme and the amouht required for expenditure during the current financial year. Six hundred copies of the Technical programme are enclosed.

By Order,

For Chief Secretary to Government.

V.".R.2.

G.G. 112-36-8

No. 1284/ Ene. One.

CHIEF SECRETARY'S OFFICE 2360 1 - NOV. 1937 DEVELOPMENT BRANCH

OFFICE OF THE SUPERINTENDENT,
GOVT. GARDENS IN MYSORE,
LAL-BAGH, BANGALORE.

Dated 28-10-1937

FROM

DR. L. S. DORASAMI, M.SC. (LOND.), PH.D. (LOND.),
Offg. *Superintendent, Government Gardens in Mysore, Bangalore.*

CHIEF SECRETARY 29 OCT. 1937 TO GOVT. OF MYSORE.

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
Bangalore.

+ G.G. 112-36(1)-8

Sir,

I have the honor to submit herewith an extract of the Proceedings of the Meeting of the Horticultural Research Workers' Conference held at - Simla on the 13th September 1937.

"Technical Programme of work under the Fruit Research Scheme in the Mysore State".-

The Imperial Entomologist made the following remarks on the ---- entomological points of the technical programme.

" In Mysore the programme was rather vague and nothing definite was stated. Mr Doraswami stated that at present about two acres were reserved for detailed mycological and entomological investigations and details of working would be submitted later...Subject to these remarks the technical programme was approved"

It was also explained by me that this was the first instance when a large number of several varieties of apple plants and other Miscellaneous fruits were being imported on large scale,and tried. What other diseases and pests these new varieties would bring in during their trial was a - matter for observation, experimentation and eradication. With this in view a two acre plot - isolation plot - was reserved. Details of any disease and pests as and when they occured would be treated in this reserved area and details of report would be submitted later.

The Vice-Chairman of Agricultural Research and Dr Burns Agrl. Adviser to the Govt of India approved of the explanation and subject to this remark the technical programme was approved.

I have the honour to be
Sir
Your most obedient servant

L. S. Dorasami 28/10

Offg Superintendent

NSH

WD 355—GPB—1,500—7-9-37

0d&c 3&90

193

FROM

DR. L. S. DORASAMI,
M.Sc. (LOND.), PH.D. (LOND.),
Offg. *Superintendent, Government Gardens*
in Mysore, Bangalore.

To

Dated

Despatched

Received

General No.
No.

Enclosure No.

Proceedings of the meeting of the Horticultural Research - Workers' Conference, held at Simla on the 13th September 1937.

The following were present:-

1. Mr N.C.Mehta, Chairman
2. Mr P.Abisheganatham Pillai
3. Mr Ali Mahomed Ulvi
4. Mr S.S.Bhatt
5. Dr W.Burns
6. Dr G.S.Cheema
7. Dr L.S.Doraswamy
8. Mr H.L.Dutt
9. Mr R.D.Fordham
10. Mr M.R.Fotedar
11. Dr Hem Singh Pruthi
12. Mr H.C.Javaraya
13. Sirdar Sahib Sardar Lal Singh
14. Professor P.C.Mahalanobis
15. Mr K.C.Naik
16. Miss Rajul Shah
17 Mr Ram Surat Singh
18. Mr M.Rasul Sultan
19. Dr Sham Singh
20. Mr S.Subramania Iyer
21. Mr R.Zarbakht Khan.

Rai Bahadur R.L.Sethi (Rapporteur)

Pandit Lakshmi Kanta Maitra, M.L.A., was present by special - invitation.

2. x x x x x x x x

3. x x x x x x x x

4. x x x x x x x x x

5. x x x x x x x x

6. x x x x x x x x x

7. x x x x x x x

8. x x x x x x x

9. x x x x x x x x x

10. x x x x x x x x x

11. x x x x x x x x x

12. x x x x x x x x x

13. The Committee then passed on to the following technical programmes

(i) Technical programme of work for the year 1937-38 under the Hill Fruit Research Scheme, Chaubattia (United Provinces) (Item 9 of the Agenda).

(ii) Technical programme of work at the Horticultural Research Station, Sabour, (Item 10 of the agenda)

(iii) Technical programme of work under the scheme of research on 'Santra' oranges in the Central Provinces (Item No.11 of the agenda).

(iv) Technical programme of work under the Fruit Research scheme in the Mysore State (item No.12 of the agenda).

(v) Technical programme of work at the Horticultural Research Station, Krishnagar for the year 1937-38 (item No.12A of the agenda

The Imperial Entomologist made the following remarks on the entomological parts of the various technical programmes.

Chaubattia (United Provinces).

x x x x x x

Central Provinces.

x x x x x x

MYSORE:- In Mysore the programme was rather vague and nothing definite was stated. Dr Doraswami stated that at present about two acres were reserved for detailed mycological and entomological investigations and details of working would be submitted later.

Research on Santra oranges in the Central Provinces.

x x x x x x

Subject to these remarks the technical programmes were approved.

14 x x x x x x

Simla,
The 22nd September 1937.

R.L.Sethi,
Assistant Agricultural Expert.

E X T R A C T .

L. S. Ormsaeen
28/10.
Offg Superintendent
Government Gardens

G.G. 65-35-20

Telegraphic address :—
AGRISEC.

No. F.52(25)/37-A.

IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH.

New Delhi, the 15th December 1937.

GG
CHIEF SECRETARY
20 DEC. 19
GOVT. OF MYSORE

20 DEC.
DEVELOPMENT

From

N.C.Mehta, Esq., I.C.S.,

Secretary,

To

The Chief Secretary to the Government of
H.H. the Maharaja of Mysore,
General and Revenue Secretariat,
Bangalore.

Subject:- Technical programmes on Schemes financed by the Imperial Council of Agricultural Research - Comments of the Council.

Sir,

With reference to your letter No.D.8801/G.G.,65-35-17, dated the 25/26th June 1937 I am directed to say that the marginally noted technical programme was examined by the Horticultural Research Workers' Conference and the Advisory Board, in 1937. Relevant extracts from the proceedings are enclosed for information.

Technical programme of work under the Fruit Research Scheme in the Mysore State.

2. A copy of the letter is being endorsed to the Director of Agriculture, Mysore, for information and necessary action.

I have the honour to be,
Sir,
Your most obedient servant,

Secretary

P.

Technical programme of work under the Fruit Research Scheme in the Mysore State.-

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Extracts from the Horticultural Research Workers' Conference, held on the 13th September 1937.

x x x x

The Imperial Entomologist made the following remarks on the Entomological parts of the various technical programmes.

x x x

In Mysore the programme was rather vague and nothing definite was stated. Mr. Dorasami stated that at present about two acres were reserved for detailed mycological and entomological investigations and details of working would be submitted later.

Mr.Iyer pointed out that in the Mysore programme the numbers of experimental trees proposed were so large that it would be physically impossible to maintain individual tree records. He further suggested that before laying down the field experiments help of the ~~Station~~ Statistician to the Council should be sought in the matter. Dr. Burns asked him to put up a note in this connection.

x x x x

Subject to these remarks the technical programmes were approved.

x x x

Extracts from the proceedings of the Advisory Board meeting held on the 8th November 1937.

x x x

Approved.

x x x x

Appendix F G—1]

48

SUBJECT .....

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Section G.G

File No. 65-35

Serial No. 21

Diary No. of letter replied to.....

No. D 4857/En/

To

The Supdt. G.G.

Sir,

General and Revenue Secretariat

( )

the *193*

With reference to your letter no. 1284 dated 28th Oct. 37 forwarding an extract from the Proceedings of the Meeting of the Horticultural Research workers' Conference held at Simla on the 13th Sept. 1937, I am directed to state that the Tech. Programme of work under the Fruit Research Scheme in the Mysore State has been ~~Considered~~ examined by the Advisory Board of the I.C.A.R. also. Relevant extracts from the proceedings are enclosed for

Date of issue 12-1-38

Signed by M K Srinivasan

List of enclosures.....

Copied by .....

Examined by.....

information. Dam may be requested to take action in receiving further action in the matter in consultation with the Dir. of Agri. in regard to technical matters pertaining to the Scheme.

I have the honour to be,

Sir,

Your most obedient servant,

11/12/57

Ch. Secy

D 4855
Encls

Copies to Dir. of Agri. with a copy of the Proceedings referred to above. Correspondence Tree pertaining are also enclosed for ref.

Dir. of Agri.

O-M.

The Deputy is an administrative charge of the States subject to general supervision and control of the Dir. of Agri. in regard to tech. matters pertaining to the Scheme.

Dir.

The Secy. I.C.A.R. may please state that action has already been taken by the Dept.

11/12

Ch. Secy.

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No D 4854 — *Dated, Bangalore,* 8th January 1938.
12-4

From

The *Chief Secretary to the Government of His Highness the Maharaja of Mysore.*

To

The Superintendent,
Government Gardens in Mysore,
Bangalore

Sir,

With reference to your letter No.1284 dated 28th October 1937 forwarding an extract from the Proceedings of the Meeting of the Horticultural Research Workers' Conference held at Simla on the 13th September 1937, I am directed to state that the Technical Programme of work under the Fruit Research Scheme in the Mysore State has been examined by the Advisory Board of the Imperial Council of Agricultural Research also. Relevant extracts from the propeedings are enclosed for information. I am now to request you to take all necessary further action in the matter in consultation with the Director of Agriculture in regard to technical matters pertaining to the scheme.

I have the honour to be,

Sir,

Your most obedient servant,

Sd/- B.T.Kesavaiengar,

Chief Secretary to Government.

Memo No. D 4855
Encl 3 Books.

Dated, Bangalore, 8th January 1938.
12-4

Copy of the above is forwarded with compliments to the Director of Agriculture in Mysore. 3 copies of the Technical Programme are also enclosed for reference.

By Order,

M.S. Srinivasacharya

for Chief Secretary to Government.
18

Technical Programme of work under the Fruit Research Scheme in Mysore State.-

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Extracts from the Horticultural Research Workers' Conference, held on the 13th September 1937.

x x x x x

The Imperial Entomologist made the following remarks on the Entomological parts of various technical programmes.

x x x x

In Mysore the programme was rather vague and nothing definite was stated. Mr. Doraisami stated that at present about two acres were reserved for detailed mycological and entomological investigations and details of working would be submitted later.

Mr. Iyer pointed out that in the Mysore programme the numbers of experimental trees proposed were so large that it would be physically impossible to maintain individual tree records. He further suggested that before laying down the field experiments help of the statistician to the Council should be sought in the matter. Dr.Burns asked him to put up a note in this connection.

x x x x x

Subject to these remarks the technical programmes were approved.

x x x x

Extracts from the proceedings of the Advisory Board meeting held on the18th November 1937.

x x x

Approved.

x x x x